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Conference

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Nineteen Hundred and Fifteen

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Morlock, Mr. Frederick B., Supt., The Memorial Hospital, Richmond, Va.
Trout, Hugh A., M.D., Supt., Jefferson Surgical Hospital, Roanoke, Va.
Van Vort, Mrs. R. Z., Supt., Stuart Circle Hospital, Richmond, Va.

WASHINGTON

Falconer, Miss Ida R., Redmond, Wash.
Rogers, Miss Ruby C., Supt., Hoquiam General Hospital, Hoquiam, Wash.

WEST VIRGINIA

Behrens, Mr. H. F., Trustee, Wheeling Hospital, Wheeling, W. Va.
Clark, Mr. Pliny O., Supt., City Hospital, Wheeling, W. Va.
Harkheimer, Mr. Louis, Trustee, Ohio Valley Gen. Hospital, Wheeling, W. Va.

Hazlett, Mr. Howard, Trustee, Wheeling Hospital, Schmulbach Bldg., Wheeling, W. Va.
Hills, Mrs. Mabel, Supt., City Hospital, Parkersburg, W. Va.
Peterson, Mr. B. W., Trustee, Wheeling Hospital, Wheeling, W. Va.

WISCONSIN

Clark, Mr. Charles B., Trustee, Theda Clark Memorial Hospital, Neenah, Wis.
DeMuth, Miss Frances, R.N., Kemper Hall, Kenosha, Wis.
Fritchell, Mr. Herm. L., Supt., Milwaukee Hospital, Milwaukee, Wis.
Hansberry, J. S., M.D., Supt., Woodsmere Sanitarium, Wonewoc, Wis.
Hansberry, P. H., M.D., Supt., The Hillsboro Hospital, Hillsboro, Wis.
Hart, Miss Mary B., Supt., River Pines Sanitarium, Stevens Pt., Wis.
Ingwerson, Miss Ella C., Supt., La Crosse Hospital, La Crosse, Wis.
Langley, Miss Aida E., Supt. of Nurses, Wisconsin State Hospital, Mendota, Wis.
Marie, Sister, R.N., 2224 Chestnut St., Milwaukee, Wis.
Sidenberg, Mr. Paul, Trustee, Mount Sinai Hospital, Milwaukee, Wis.
White, Miss Regina, Supt., Johnston Emergency Hospital, Milwaukee, Wis.
Wipperman, Miss Helen S., Supt., Mount Sinai Hospital, Milwaukee, Wis.

WYOMING

Lathrop, H. R., M.D., Supt., Casper Private Hospital, Casper, Wyo.

HONORARY MEMBERS.

Burdett, Sir Henry, K.C.B., K.C.V.O., Porchester Square, W., London, Eng. Elected 1905.

Child, Byron W., Esq., Capitol Bldg., Albany, N.Y. Elected 1902.

Day, Frank Miles, Esq., 801 Penn. Mutual Bldg., Philadelphia, Pa. Elected 1903.

Darragh, Chas. G., Esq., 1430 So. 58th St., Philadelphia, Pa. Elected 1904.

Firth, Frank J., Esq., 176 Arcade Bldg., Philadelphia, Pa. Elected 1906.

Hill, Robert W., Esq., Capitol Bldg., Albany, N.Y. Elected 1901

Kirkbridge, Franklin B., Esq., 37 Madison Ave., New York, N.Y. Elected 1903.

Lodge, Hon. Frank T., Attorney-at-Law, Detroit, Mich. Elected 1910.

Mackintosh, Donald J., M.B., M.V. O., Western Infirmary, Glasgow, Scotland. Elected 1908.

Mosher, J. M., M.D., 170 Washington Ave., Albany, N.Y. Elected 1904.

Pardee, C. W., Esq., Delaware Ave., Buffalo, N.Y. Elected 1907.

Smith, R. W. Bruce, M.D., Parliament Bldg., Toronto, Ont. Elected 1907.

Stockwell, Herbert G., Esq., 833 Land Title Bldg., Philadelphia, Pa. Elected 1904.

Sutton, Del. T., Esq., 157 Alexandrine W., Detroit, Mich. Elected 1899.

Woodbridge, Prof. Homer S., Institute of Technology, Boston, Mass. Elected 1904.

CONSTITUTION.

Article I.

The name of this Association shall be "The American Hospital Association."

Article II.

The object of this Association shall be the promotion of economy and efficiency in hospital management.

Article III.

Membership.

Sec. 1. The membership of this Association shall be active, associate and honorary.

Sec. 2. Active members shall be those who at the time of their election are trustees or executive heads of hospitals, without reference to sex, title or denomination. Any person, once an active member, may continue such membership subject to all rules pertaining to membership.

Sec. 3. Associate members shall be executive officers of hospitals next in authority below the superintendent, contributors to, or officers or members of association, the object of which is the foundation of hospitals or the promotion of the interests of organized medical charities, hospital physicians, surgeons, pathologists and superintendents of nurses. Associate members shall not have the right to vote.

Sec. 4. All applications for membership shall be in writing, and addressed to the Secretary, and shall be endorsed by one or more members of the Association. They shall be referred by the Secretary to the Committee on Membership for examination and report. The candidate shall be notified of the result. If elected, he shall become a member of the Association on payment of an initiation fee of $5.00, which shall also cover his first dues. Any person once an active member may continue such membership, subject to all rules pertaining to membership.

Sec. 5. Honorary membership may be suggested at any meeting of the Association by any member for any person whose services, public or private, may entitle him to such recognition, or for any other person who, in the judgment of the Association, is entitled to such membership.

Sec. 6. Honorary members shall have all the privileges of active members, except voting. They shall be exempt from the payment of dues.

Article IV.

The executive officers of the Association shall consist of a President, three (3) Vice-Presidents, a Secretary and a Treasurer.

Article V.

The executive officers shall be elected at each Convention, and shall serve until the close of the Convention next succeeding, or until their successors are regularly elected and installed.

Article VI.

All vacancies occurring in executive offices between conventions shall be filled by the Executive Committee.

Article VII.

Amendments to the Constitution shall be submitted in writing. Amendments cannot be acted upon at the session at which they are proposed, but may be at any subsequent session. They shall be passed by not less than two-thirds vote of the members present and voting.

BY-LAWS.

Article I.

Meetings.

Sec. 1. The regular meetings of the Association shall be held at the places and on the dates fixed by the Convention or the Executive Committee of the Association. The committee, in conjunction with the President and Secretary, shall also arrange the programs for the Conventions.

Sec. 2. Special meetings may be called by the President, or, in his absence, by a Vice-President, upon the written petition of not fewer than ten (10) members. This petition shall recite the object of the call. The President, through the Secretary, shall give notice of not less than sixty (60) days before the proposed time of such special meeting to each member of the Association, which notice shall also recite the object of the meeting.

Sec. 3. A quorum of the Association shall consist of not fewer than thirty (30) members.

Article II.

Elections.

Sec. 1. All officers shall be elected by ballot, excepting where it is otherwise ordered.

Sec. 2. A majority of the votes cast shall constitute an election.

Sec. 3. Only active members shall be entitled to vote.

Article III.

Duties of Officers.

Sec. 1. The President shall preside at all meetings of the Association. He shall appoint all committees, unless, by vote of the Association, other provisions shall be made. He shall be *ex-officio,* a member of all standing and special committees.

Sec. 2. The Vice-Presidents shall, in the order of their rank, in the absence of the President, perform his duties.

Sec. 3. The Secretary shall keep the Minutes of the meetings and the records of the Association in a book provided for these purposes. The Secretary shall furnish to the Committee on Publication, within ten (10) days after the adjournment of the regular Convention, a correct copy of the Minutes thereof for publication in the "Proceedings." The Secretary shall be allowed not to exceed the sum of $600 per annum to defray cost of clerical assistance.

Sec. 4. The Secretary shall conduct the correspondence of the Association, and shall keep on file all letters and all correspondence, together with all replies thereto.

Sec. 5. The Treasurer shall receive all dues and other moneys of the Association, and shall pay all bills approved by the President and Secretary, and shall submit these accounts, together with a financial report, at the regular meeting of the Auditing Committee, after which he shall present this report, with the endorsement of the Auditing Committee, to the Convention. The Treasurer shall be allowed not to exceed the sum of $120 per annum to defray the cost of clerical assistance.

Article IV.

Committees.

Sec. 1. The President elected at the regular Convention shall appoint the following standing committees: An Executive Committee of five (5) members; an Auditing Committee of three (3) members; a committee on Nomination of Officers of three (3) members; a Membership Committee of three (3) members; a committee of three (3) on Legislation; a committee on Constitution and Rules of three (3) members; a committee on Hospital Progress of six (6) members; a committee on the Development of the Association of three (3) members, and a Non-Commercial Exhibition Committee of five (5) members, including Chairman.

Sec. 2. The Auditing Committee shall receive and audit all accounts of the Treasurer and all bills contracted on account of the Association, stamp its approval thereon, and return them to the Treasurer for submission to the Convention.

Sec. 3. The Committee on Nomination shall nominate to the Convention the names of candidates for President, three (3) Vice-Presidents, Secretary and Treasurer. The action of this committee is at all times subject to the approval of the Convention.

Sec. 4. The Membership Committee shall receive and consider all names of candidates proposed for membership, and shall report results to the Convention for final action.

Sec. 5. The Committee on Constitution and Rules shall consider and report on all proposed amendments in the Constitution and By-laws and all Rules of Order.

Sec. 6. The Committee on Hospital Progress shall observe the development of hospital work in the United States and Canada and shall submit a report of its observation at the annual Convention of the Association.

The Committee on Hospital Progress shall be subdivided as follows:

(a) A committee of one on hospital construction.
(b) A committee of one on hospital efficiency, hospital finances and the economics of construction;
(c) A committee of one on medical organization and medical education;
(d) A committee of one on the training of nurses;
(e) A committee of one on out-patient work;
(f) A committee of one on hospital accounting.

Sec. 7. The Committee on the Development of the Association shall present annually a report on the further development of the Association's work.

Sec. 8. The Committee on Legislation shall report annually to the Association on all national and state legislation of interest to hospitals or training schools.

Sec. 9. The Committee on Non-Commercial Exhibits shall arrange annually for an exhibit of non-commercial hospital appliances. The chairman of this committee shall be an officer of the Association, to be appointed by the President for a period of two years, and shall be allowed a sum not exceeding $250 per annum to defray expenses.

ARTICLE V.

Dues.

Sec. 1. The dues of active members shall be Five Dollars ($5.00); the dues of associate members shall be Two Dollars ($2.00). Dues shall be paid to the Treasurer of the Association on or before each regular meeting of the Association.

Sec. 2. Any member delinquent in his dues more than two (2) successive Conventions shall, upon the report of the Treasurer of adequate notification, be suspended from membership.

Sec. 3. The Treasurer shall notify the delinquent of such suspension, and at the same time the Secretary of the Association, who shall enter it upon the records.

Sec. 4. Any delinquent may reinstate himself upon payment of all back dues, as well as those for the ensuing Convention.

ARTICLE VI.

Publication of Proceedings.

Sec. 1. The President shall appoint three active members of the Association as a Publication Committee, one of whom shall be the Secretary of the Association. It shall be the duty of this committee to edit and publish the annual transactions of the Association.

Sec. 2. The Secretary shall furnish each active and honorary member a copy of this publication.

Sec. 3. The Treasurer shall, upon the certification of the President and Secretary, pay all bills for the printing and publication of the Proceedings of the regular Conventions.

ARTICLE VII.

Guests.

Members of this Association may have the privilege of inviting special guests to the meetings, with the consent of the President. Guests thus introduced shall be permitted to participate in the discussions.

ARTICLE VIII.

Discipline.

Sec. 1. All charges of violation and infraction of rules or unbecoming conduct shall be referred to a special investigating committee appointed by the President.

Sec. 2. Due notice of the charges shall be given to the alleged offender, in writing, by the Secretary of the Association.

Sec. 3. The Association shall have the right and authority to reprimand, suspend and expel any member guilty of violation of any of the provisions of the Constitution or By-laws of the Association, after a full and fair investigation shall have been made.

Sec. 4. A four-fifths vote shall be necessary to sustain the action of such committee.

ARTICLE IX.

Order of Business.

Calling of the Association to order.

Reading of minutes of the previous Convention.

Announcements. Unfinished business.

Reports of Committees.

New Business.

Presentation of Papers, and Discussion.

ARTICLE X.

Amendments to By-laws.

No part of these By-laws shall be suspended, altered, or changed, except as provided for by Article VII of the Constitution.

MINUTES OF THE SEVENTEENTH ANNUAL CONFERENCE OF THE AMERICAN HOSPITAL ASSOCIATION,

June 22, 23, 24, 25, 1915.

TUESDAY, JUNE 22—MORNING SESSION.

Called to order by Miss Ida M. Barrett, Third Vice-President, at 10:30 a. m., June 22, 1915, at the Hotel Inside Inn, San Francisco, Cal.

Invocation by Rabbi Dr. Martin A. Meyer, President, State Board of Charities and Corrections, San Francisco, Cal.

The Chairman, after a brief address, turned the meeting over to Acting-President H. T. Summersgill.

Dr. A. R. Warner moved that a temporary Secretary and a temporary Treasurer be appointed by the Chair. The President called for nominations. Dr. John A. Hornsby nominated Dr. Willis G. Nealley as temporary Secretary, and Mr. E. S. Gilmore as temporary Treasurer, who were duly elected.

Dr. Summersgill read the President's Address.

Dr. John A. Hornsby moved that a committee be appointed to draw up resolutions to be engrossed relative to the death of Dr. Mann.

Motion seconded and carried.

Dr. F. H. Holt moved that resolutions be passed thanking the officials of Kansas City for their hospitality to the members of the Association, resolutions to be forwarded to the Mayor of Kansas City.

Seconded and approved.

Dr. John A. Hornsby, of Chicago, presented the report of the Committee on Inspection, Classification and Standardization of Hospitals.

Mayor Rolph, of San Francisco, being detained by illness, his Secretary, Mr. Rainey, delivered an address of welcome to the Association.

Dr. A. R. Warner moved that the report of the Committee on Inspection, Classification and Standardization of Hospitals be accepted and spread on the minutes of the Association.

Seconded and approved.

The report of Dr. Joseph B. Howland for the Committee on Medical Organization and Medical Education was read by Dr. Louis H. Burlingham.

Dr. F. H. Holt moved that the report be accepted and printed in the minutes.

Seconded and approved.

The President announced that he had received a communication from the officials of the Panama-Pacific Exposition stating that they desired to present to the organization a bronze medal, time of presentation to be announced later.

Dr. James L. Whitney, of the University of California Hospital, San Francisco, read a paper on "The Nomenclature and Classification of Diseases in Use in the University of California Hospital." After a few remarks by the President, the paper was discussed by Dr. E. S. Kilgore.

Meeting adjourned at 12:00 m.

TUESDAY, JUNE 22—AFTERNOON SESSION.

Meeting called to order at 2:30 p. m. by Acting-President H. T. Summersgill.

A paper on "The Effect of Legislation Upon the Schools for Nurses in California," was read by Miss Anna C. Jamme, Secretary, Board of Registration of Nurses, Sacramento, Cal.

The paper of Miss Anne A. Williamson, R. N., Superintendent of Nurses, California Hospital, Los Angeles, on "The Eight Hour Law, its Present and its Future," was read by Mrs. Mitchell, of the Pacific Hospital, Los Angeles.

Miss Harriet Leck, Principal, Grace Hospital Training School for Nurses, Detroit, Mich., read a paper on "Progress in Nursing."

These papers were discussed by Dr. C. H. Shutt, of St. Louis, Miss Jamme, Miss Pickhardt, of Pasadena, Mrs. Mitchell, of Los Angeles, and Miss Mary M. Goodrich, of New York.

Miss Charlotte A. Aikens, Chairman of the Committee to Consider the Grading and Classification of Nurses, delivered the report of the Committee. In accordance with the wish of the Committee, action on the report was deferred.

The President recommended that the report of the Committee on Constitution and By-Laws be postponed.

Dr. F. H. Holt, moved that the report be taken up on the following day.

Motion seconded and approved.

Meeting adjourned at 4:15 p. m.

WEDNESDAY, JUNE 23—MORNING SESSION.

Meeting called to order at 10:00 a. m., by Dr. John A. Hornsby, at the request of the Acting-President.

Miss Laura E. Coleman read the changes proposed in the Constitution.

Dr. F. H. Holt moved that mimeographed copies of the revised Constitution be prepared and presented to the members for their consideration.

Seconded. Approved.

Dr. John A. Hornsby offered the following resolutions:

(1) Resolved: That the President be and hereby is requested to appoint a local committee on arrangements for the meeting of the Annual Conference, and, further Resolved: That the next President be requested to appoint a committee on transportation arrangements for the next Conference and that the duties of such committee shall include arrangements for any special trains, excursions, etc.; and that the work of said committee shall be under the direction of the President and Executive Committee.

(2) Resolved: That the next President and Executive Committee shall have the power of this Conference delegated to them to change the time and place of the next annual meeting, if at any time during the year it shall appear to them that arrangements in the city chosen by this Conference as the next meeting place are not satisfactory or that the time chosen is not propitious for the meeting.

(3) Resolved: That it is the desire of this Conference that there be created for the next annual Conference an adequate and comprehensive commercial exhibit; that the next President is hereby requested to appoint a proper committee to get up such exhibit; and that a sum, not to exceed $500.00, be and is hereby appropriated for the use of such committee, to be expended under the direction of the President and the Executive Committee.

(4) Resolved: That the next President and Executive Committee be informed that it is the sense of this Conference that the American Hospital Association should have a paid, permanent Secretary; and that the next President and Executive Committee seek ways and means to provide for such Secretary.

Dr. John M. Peters moved the adoption of the resolutions.

Carried.

The Acting-President announced the committee on resolutions in connection with the death of Dr. Mann to consist of Dr. John M. Peters, Chairman, Dr. Louis H. Burlingham, and Dr. Frederic A. Washburn.

Dr. John W. Draper, Laboratory of Physiological Surgery, New York City, read a paper on "Medicine and the World War."

Dr. Robert J. Wilson read a paper on "Little Things that Are Big Things in Hospital Management." Discussed by Mr. O. H. Bartine, Dr. W. H. Walsh, Dr. C. H. Shutt, Mr. J. B. Franklin.

The Acting-President resumed the Chair.

The Hospital Superintendent and the Architect. (Paper by Mr. Warren C. Hill.)

Method of Rating Professional Men for Hospital Appointments, for Promotion and for Hospital Reports. (Paper by Dr. Robert L. Dickinson.)

Some Apparently Accepted Hospital Units. (Paper by Dr. Henry M. Pollock.)

Adjourned at 12:20 p. m.

WEDNESDAY, JUNE 23—AFTERNOON SESSION.

A joint meeting was held, at 2:30 p. m., of the American Nurses' Association and the American Hospital Association, at the Greek Theatre, Berkeley, Cal.

WEDNESDAY, JUNE 23—EVENING SESSION.

Called to order at 8:20 p. m., by Acting-President Summersgill.

Mr. Stevens discussed the paper presented by Mr. Hill at the morning session.

The Possibilities of Future Development in the Service Rendered by a Hospital to the Community. (Paper by Dr. A. R. Warner.)

Correlation of Hospital Diets. (Paper by Miss Grace E. McCullough.) Discussed by Dr. A. R. Warner and Miss McCullough.

What Should Hospital Dietitians and Dietitian Housekeepers be Taught and How Trained. (Paper by Miss Laura E. Coleman.) Discussion by Miss Barrett, Miss Jaquith, Dr. Summersgill, Dr. Bunn, Dr. Bachmeyer, Miss McCullough.

Report of Committee on Hospital Finance and Cost Accounting. (Read by Miss Lucia Jaquith.)

Report adopted.

Dr. F. H. Holt took the Chair and conducted a round table conference and question box.

Adjournment at 10 p. m.

THURSDAY, JUNE 24—MORNING SESSION.

Called to order at 10 a. m. by the Acting-President.

Committee on time and place of Conference for following year appointed: Dr. A. R. Warner, Chairman, Miss Burns, Mr. Bartine and Mr. Spaulding.

Auditing Committee: Dr. Robert J. Wilson, Mr. Franklin and Dr. Bachmeyer.

The Question of Efficiency and Simplicity in Hospital Records. (Paper by Dr. Edward Martin.)

Clinical Records in Relation to Teaching and Research; A New Plan to Promote Conservation and Utilization of Material. (Paper by Dr. Eugene S. Kilgore.)

Heating, Ventilating and Power Plants of Hospitals. (Paper by Mr. Dwight D. Kimball.) Discussed by Mr. O. H. Bartine.

Efficiency and Progress in Hospitals. (Paper by Mr. Howell Wright.)

Report of Committee on Hospital Information. (Read by Mr. Newman.)

Report accepted.

Medical and Surgical Efficiency in Large General Hospitals. (Paper by Dr. Frederic A. Washburn.)

Report of Membership Committee. (Read by Secretary Pro Tem.)

Report adopted.

Adjournment at 11:50 a. m.

THURSDAY, JUNE 24—AFTERNOON SESSION.

Called to order at 2:30 p. m., by the Acting-President.

The Building of the Hospital; Construction. (Paper by Mr. O. H. Bartine.) Discussed by Mr. D. D. Kimball and Miss Wheeler.

Contemporary Mistakes in Hospital Construction. (Paper by Dr. John A. Hornsby.)

Engine Room Economics. (Paper by Dr. Thomas Howell and Mr. Philip Murray.)

Proposed changes in Constitution taken up. After some discussion, Dr. Hornsby moved that these lay over until the next meeting. Approved.

Proposed Plan for the Work of a Social Service Department of a State University Hospital. (Paper by Dr. Louis Morrow.)

Interdependence between Hospital and Outside Work. (Paper by Mr. Richard M. Bradley.)

Adjournment at 4:15 p. m.

THURSDAY, JUNE 24—EVENING SESSION.

Called to order at 8:15 p. m. by Miss Ida M. Barrett, Third Vice-President.

The Need of Pay Clinics for Persons with Incomes from $900.00 to $3,000.00. (Paper by Dr. Richard Cabot, of Boston.) Discussed by Dr. Hornsby, Dr. Bachmeyer, Dr. Cabot, Dr. Warner.

Report of Committee on Out-Patient Work. (Read by Mr. Michael M. Davis, Jr.)

Dr. Hornsby moved that $250.00 be transferred from Committee to Study the Character, Cost and Value of Direct and Indirect Work for the Prevention of Diseases now Conducted by Hospitals and Dispensaries, to Arrange in the Order of their Importance and Practicability Successive Steps for the Extension of Such Work, and to Prepare Methods for its Financial Support and for its Correlation with the Similar Work of Other Agencies, Public and Private, to the Committee on Out-Patient Work.

Motion carried.

Purchasing Hospital Supplies. (Paper by Dr. Louis H. Burlingham.)

High Ideals in Nursing. (Paper by Mrs. Alice Flash.)

The Company Hospital. (Paper by Dr. R. W. Corwin.)

Care of Cases of Mental Disease in General Hospitals. (Paper by Dr. Henry M. Hurd, read by Dr. Seem.)

Adjournment at 11 p. m.

FRIDAY, JUNE 25—MORNING SESSION.

Called to order at 9:30 a. m., by the Acting-President.

Announcements relative to drive.

Report of the Treasurer.

DR. WILLIAM ORRIS MANN

President 1914-1915

Died April 9, 1915

Dr. Burlingham read the following resolutions:

Dr. William Orris Mann, born at Randolph, Mass., 1869; died at the Massachusetts Homeopathic Hospital, April 9, 1915.

Dr. Mann received his early education at the Thayer Academy, and in 1892 was graduated by the Boston University School of Medicine. After graduation, he served his interneship at the Massachusetts Homeopathic Hospital. He was Assistant Physician for two years at the Westboro, Mass., State Hospital for the Insane, and subsequently became Assistant Superintendent of the Fergus Falls, Minn., State Hospital for the Insane.

Since 1899, when he was elected Superintendent of the Massachusetts Homeopathic Hospital, he has been the executive officer in charge of that Hospital, and the growth, the improvement and the reputation of that institution are largely due to his efforts.

Dr. Mann was an earnest, progressive and faithful executive officer and was tireless in carrying out the multitudinous details connected with the work of his position.

To the hospital field, his loss will be great and lasting—to this Association, his death has meant much—to those who knew him as a faithful, loyal friend, his place can never be filled.

Resolved that this memorial be spread on the records of the Association, and that a copy be sent to the family and to the Massachusetts Homeopathic Hospital.

Mr. Davis moved the adoption of the resolutions.

Carried.

Dr. Warner reported that the Committee on Time and Place of Next Conference recommended that the meeting be held in Philadelphia, time to be left to new Committee on Arrangements.

Dr. Baldwin moved the adoption of the report.

Carried.

Dr. Walsh assured the Association of the welcome it would receive in Philadelphia.

Dr. Hornsby reported for the Nominating Committee as follows:

For President, Dr. Winford H. Smith, of Baltimore.

For First Vice-President, Dr. Charles D. Wilkins, of New Orleans.

For Second Vice-President, Miss Nettie B. Jordan, of Aurora, Ill.

For Third Vice-President, Dr. A. R. Warner, of Cleveland.

For Treasurer, Mr. Asa S. Bacon, of Chicago.

For Secretary, Miss Lydia H. Keller, of Minnesota.

Dr. Baldwin moved the adoption of the report. Unanimously carried.

Dr. Hornsby moved a rising vote of thanks to Dr. Summersgill. Carried.

Dr. Hornsby moved that the Acting-President and Secretary Pro Tem be constituted a Committee for the acceptance of the Treasurer's report. Approved.

Adjourned at 10:45 a. m.

PROCEEDINGS OF THE SEVENTEENTH ANNUAL CONFERENCE OF THE AMERICAN HOSPITAL ASSOCIATION.

Held at San Francisco, Cal., June 22, 23, 24, and 25, 1915.

TUESDAY, JUNE 22—MORNING SESSION.

The Conference met at the Hotel Inside Inn, at 10:30 a. m., Miss Ida M. Barrett, Third Vice-President, in the chair.

CHAIRMAN: The reading of the minutes of the last meeting will be dispensed with, and we will listen to the invocation. Rabbi Martin A. Meyer, President, State Board of Charities and Corrections, of San Francisco.

RABBI MARTIN A. MEYER: Heavenly Father, whose grace extends unto all Thy creatures, whose mercy is made manifest in the service of brothers for their less fortunate companions, may Thy blessing and message of good will rest upon those who are now assembled in our "Rainbow City" to deliberate how best to bring relief to suffering man. May Thy wisdom, O Heavenly Father, inspire their thoughts so that they may see clearly and may so invigorate them in spiritual grace that they may see their brothers and know them and understand them across the differences of opinion, and may mind draw near unto mind over the chasms which separate them in the pursuit, each of his own ideal. May they be blessed, these delegates of this Association, in their coming into this Conference and into this city, and may they go forth laden with golden sheaves of new ideas and of possibilities of finer and larger achievement. May Thy Law, Our Heavenly Friend, guide their hearts, and grant them peace forevermore. Amen.

CHAIRMAN: I have received word that Mayor Rolph has been detained. Mr. Edward Rainey, the Mayor's Secretary, is just finishing at the Columbia Theater addressing the American Medical Association and will come here from there. He has asked that he be put later on the program.

It is now my privilege to introduce Dr. Summersgill, who will give the President's Address and will preside at the remainder of the meeting. (Applause.)

Dr. A. R. Warner, Cleveland: In order that we may proceed more orderly, I make a motion at this time that a temporary Secretary and a temporary Treasurer be appointed by the Chair.

Motion seconded.

President: Nominations will now be in order.

Dr. John A. Hornsby, Chicago: I nominate for temporary Secretary, Dr. Willis G. Nealley, and for temporary Treasurer, Mr. E. S. Gilmore.

Motion seconded and carried.

Dr. Summersgill read the President's Address:

PRESIDENT'S ADDRESS.

By Dr. H. T. Summersgill,

Superintendent, University of California Hospital.

Ladies and Gentlemen of the American Hospital Association:

In the second week of April, many of us were greatly shocked and grieved to hear of the rather sudden death of Dr. Mann. Coming as it did, only a short time before this meeting, there naturally followed more or less confusion.

Dr. Ancker, First Vice-President, found it impossible to accept. I received a telegram asking the Executive Committee to take action; as a result, I both telegraphed and wrote to the Secretary that it was the wish of the Executive Committee to secure as Dr. Mann's successor, one of three men, two of whom were from Boston and the other not far distant, but who was very close to our late President. In answer, I received a telegram stating that the men suggested could not accept. This telegram inquired if I would take the place, I promptly did so, feeling that further delay might more than offset my limited qualifications as a presiding officer.

Meeting as we are, on the grounds of the Panama-Pacific International Exposition, with many very interesting exhibits so close at hand, we decided that a Directory would be of value, and that by its use, our members would be enabled to see the exhibits and other interesting places of particular and special interest without interfering with the attendance at these meetings.

As this is the first meeting to be held on this coast, I trust that the interest in our Conference will be as acute as possible in order that the educational value of such meetings to the hospital workers in this section will be as pronounced as it has been in those sections where our former Conferences have been held.

The rapid changes of the general economic and social conditions has been both widespread and pronounced in its effects, particularly upon hospitals. Some legislators are prone to enact laws with only a single thought to the cause and none to the effect, and it should be one of the duties of this organization to see, in so far as those bills affecting hospitals are concerned, that the hospital side of the case should be fairly and fully presented.

Much has been said and written pro and con on the eight hour law for nurses. The constitutionality of this law was passed on by the Supreme Court of the United States during the second week in January. On its face it appears to be contrary to the principles of not only the American Constitution but to all principles of humanity. For we all recognize the impossibility of strictly limiting the hours of attendants, nurses and others engaged in taking care of the sick.

Our organization, which in the past has not been of sufficient strength to be considered a factor, has been unable to convince the Congressional Committee in Washington of the injustice of laws which exempt teaching institutions but not charitable institutions from the payment of duties on articles and instruments of foreign manufacture. A great many of our laboratory and other apparatus in hospitals are shipped from foreign countries. Our institutions are in a measure dependent upon such supplies for proper equipment, and we cannot look with pride upon the action of the United States Government in exacting duty or taxes from charitable institutions.

The greatly increasing number of drug habitues has resulted in legislation necessary to curb the sale of certain drugs, particularly opium or its derivatives, or cocaine. Upon close inspection the Harrison Bill, while its purposes are very commendable, interferes with the proper sphere of action of our hospitals, and particularly of our nurses.

There is no doubt of the fact that one of our greatest needs is to have a high grade and capable man as permanent Secretary of this Association. Besides the ordinary duties of this office there should be combined with such duties a careful scrutiny and opposition of all laws detrimental to the welfare and efficiency of hospital work and also scientific research work.

At last year's meeting it was voted to have a Secretary at the first possible opportunity. It must be borne in mind that the entire yearly proceeds of this organization at present would not properly support such an office. This office, when we are in a position to have it, should be, I believe, located in Washington, D. C.

The American Hospital Association, which is in its seventeenth year, was organized primarily for the purpose of increasing hospital efficiency. This it is doing in a magnificent manner. Starting as it did with an extremely small membership, it has now reached a membership of nearly 1,000, and has assumed such proportions that it will be necessary, as Dr. Howell said in his address last year, to change its form of organization so that it may be made less cumbersome and unwieldy, and permit of increasing its membership without lessening its efficiency.

In the President's address of last year, Dr. Howell suggested corporate membership. That suggestion was one of the most valuable that has ever been presented to this organization. I desire to recommend that our membership be divided into three classes of membership: First, Honorary; second, Active. The Active to be further subdivided into corporate membership, limited solely to the Trustees or Directors of institutions; the other subdivision of the Active membership to be the Superintendents of Hospitals. Third class to be Associate members.

It will be seen, then, that the essential difference between this plan and our present organization is the suggestion of the addition of corporate or institutional membership.

Inasmuch as hospitals have been the chief beneficiaries of the results accomplished by this organization, and inasmuch as it is only fair and reasonable to assume that these benefits will not only be sustained in the future, but in all probability, will be greatly increased, I believe we have every right to expect that a large number of hospitals in this country will gladly become corporate members.

Corporate membership need not of necessity include executive officers or superintendents of institutions, but may be limited to trustees or directors, whose subscriptions to membership in the past, I believe, has been due in the main to their charitable tendencies to assist in the good work of this organization rather than to any active interest in the organization itself.

We have as members of this organization a few trustees who are very active members. We desire more.

Some of our large problems, such as a permanent Secretary, may find a solution as the result of a corporate membership.

Many superintendents have had, and some still have to contend with improper sets of rules, or inadequate or faulty plans of organization, and occasionally have both of these undesirable factors to deal with. Such conditions render progress for the institution and justice for the Superintendent impossible. While it is true that many private institutions require special rules to guide their own peculiar conditions, I believe it is within the domain of this organization to adopt a set of model rules in which the duties of trustees, their accessory boards, and the different hospital officials and staffs, outlined in such a manner as to permit of minor changes made necessary by unusual or peculiar conditions, without modifying any generally accepted rules consistent with good organization.

Even with ideal sets of rules and competent superintendents, success will follow only in the event of Governing Boards firmly supporting their superintendents in the enforcement of approved rules. As primitive and as well recognized as this old administrative law is, we are all aware that there are altogether too many institutional boards that are derelict in their duties. But few superintendents desire to call their trustees' attention to the fact that they have failed to sustain them in the carrying out of well established rules. They only have two alternatives, either to resign or to bide their time, and to attempt to educate their Directors to the necessity of thoroughly supporting them. Cannot this organization be of some assistance where certain issues such as these arise?

Progress would undoubtedly be facilitated by the stamp of approval of this organization upon the adoption of well recognized principles of organization together with the announcement that the approved rules depend for their success upon a competent superintendent and a board that will firmly sustain him in the proper execution of his duties.

That the continuous and whole time services in hospitals provide more efficient and scientific treatment for patients, and greatly increases the potentiality of teaching, is now generally accepted. Hospitals, however, have a broad educational field other than the education of students and the treatment of the sick, within its walls; and it is one that I feel in some cases has not been given due consideration. Unless physicians, not having a whole or continuous service, are granted opportunities for hospital clinical work they will naturally be unable to keep abreast of the time and will deteriorate.

The University of California Hospital holds weekly clinics for any physician who desires to attend. In carrying on this work this University recognizes, and is attempting to carry out, its duties towards the general medical profession.

The splendid results achieved by the Carnegie Foundation in their investigation and classification of medical schools is now very apparent, and has given many of us reason to hope that some philanthropic body will start a similar undertaking with hospitals.

The deplorable conditions which exist in many of our public hospitals to-day, particularly some municipal institutions, where it is a very common practice for politicians to use these institutions for the bestowal of patronage, are very much worse in many ways than most of you realize. As the report of the Committee on Classification and Standardization of Hospitals is to be presented at this Convention, they doubtless will present many interesting and valuable recommendations.

During the past several years there have been many notable attempts to improve the standard of training for nurses. Notable among these attempts was the one of the University of Minnesota, where the nurses were permitted to take part in University courses. In those universities where there exists teaching hospitals as well as co-educational departments, an affiliation of the training department of the Training School with the University courses would be a consummation greatly to be hoped for.

It is also possible that women students in the Universities, who desire to take up nursing, may have their courses so arranged that they can elect as part of their curriculum the theoretical courses of Nursing, and receive due credit for having accomplished such work, both in the University, in having it count towards a degree, as well as in the hospital, where it may be possible to admit them to advanced standing. The advantage of having our nurses trained by highly specialized teachers must be very apparent.

This Association should give support to the institution of the metric system, particularly in our teaching institutions. The great obstacle to the adoption of this system is the inability to buy drugs labeled in the metric system, and is also due to the fact that, while students are being taught the metric system, many hospital drug departments are still using the apothecary weights. Progress along these lines will not be definite and satisfactory until there is a very sharp cleavage between the apothecary and metric systems, and efficiency demands that one or the other be wholly adopted. The best medical opinion in this country favors the metric system and it is my opinion that the American Hospital Association, by its members demanding that drugs be labeled only in this system, can be of very great assistance in its rapid adoption throughout this country.

During the past two years there has come into the life of institutional workers, a hospital magazine with which most of you are familiar. I refer to The Modern Hospital. It has made our institutional life much happier and closer, and I feel that it is a great pleasure for me to call attention to the good work that this magazine is doing, the splendid form in which it is gotten up, and to congratulate Dr. Hornsby and his co-editors for having given us a Journal that supplies us with pertinent and useful information.

I know that the hospital workers in this section have waited with expectancy upon the occasion of this Conference. I know that you are all sincerely welcome, and also that the California hospital workers desire to take an active interest in the affairs of the American Hospital Association.

Before concluding, I desire to recommend that adequate and necessary action be taken by this organization on the death of Dr. Mann, whose death is not only a sad blow to this Association but to many of its members.

Dr. John A. Hornsby, Chicago: I should like, Mr. President, to make a motion calling for the creation of a committee to draw up for presentation a proper set of resolutions to be engrossed concerning the death of Dr. Mann.

Motion seconded.

President: Is there any discussion as to the form the resolutions should take?

Dr. Hornsby: I would suggest that be left to the committee.

Question put. Motion carried.

Dr. F. H. Holt, Chicago: Mr. President, at our visit in Kansas City we were royally entertained by the officials and the hospital people and I would like to see a vote of thanks go to them for their entertainment, which was royal in every particular. I make a motion that resolutions be passed thanking the Kansas City officials.

Motion seconded.

President: A motion has been made to the effect that resolutions be drawn up and forwarded to the Mayor of Kansas City, thanking him for the kind hospitality extended to the members of this Association. All those in favor will signify by the usual sign; contrary, no.

Motion carried.

President: We will proceed to the reading of papers. The first paper is the Report of Committee on Inspection, Classification and Standardization of Hospitals, by Dr. John A. Hornsby.

Dr. John A. Hornsby, of Chicago: At our last meeting in St. Paul, your Committee reported that while we had not gone far towards success in our attempts to bring about standardization or classification, the hospitals themselves had very definitely moved forward in the elevation of standards from within. Your Committee had in its mind at that particular time a movement that had started in a great group of hospitals which had not worked just in step with us; if on the same general planes, at least, alone and not in consonance with the

Association. I refer to the large group of Sisters' Hospitals. You know the Sisters' Hospitals were the only hospitals many years ago. They have a strong, firm hold on many classes of people and yet, secluded as the Sisters themselves have been always, drawn apart by their religious character, they have not kept step with, at least, the directions of progress that the rest of us have seemed to think necessary. Of late, as your Committee referred to very vaguely last year, there has grown up a definite movement among the Sisters' Hospitals of this country, by which they propose, and are beginning to raise their standards from within. While we are meeting here now, there is a convention being held in Milwaukee, Wisconsin, that calls together a conference of the Sisters' Hospitals of the northwest. They meet on the 24th, 25th and 26th of this month. They have a program, they are going to declare a Constitution and By-laws and elect officers and begin some constructive work; not with the intention definitely to remain aloof from this Association or from other hospitals, but in order that they may have some constructive lines laid down that they themselves are peculiarly fitted to follow, may begin, as it were, as an army to drill. It would be difficult for them to take part in our form of hospital work. The Sisters do not speak in public, they cannot travel about the country except in pairs, they cannot stay at hotels, and it is awkward for them to participate in our conventions just at this time, but the very fact that they are forming a conference of their own is most encouraging to us all and we ought in every way to welcome the association. I have no doubt in my own mind that within the next two, three or four years the time will have arrived when the two bodies can join together, the Sisters' Hospitals come in with the American Hospital Association and as a part of it. Their movement will extend not only to these United States, but to the Catholic Sisters' Hospitals of Canada and of the countries to the south, Latin American, so that the standards of hospitals will be in a very important direction vastly improved.

Another movement has come up during the past year, or, at least, has taken some very definite form, viz., that of the municipal hospitals. We said when this Committee was appointed, four or five years ago, that the municipal hospitals were a disgrace. Well, we have not changed our minds; they are a disgrace still, but the most distinct change has taken place. They are now ashamed of their disgrace, which they have not been before. The municipalities in which these very badly politicalized hospitals have been conducted are apologizing for them and in a number of cases are improving them. So that I think within a very short time, we are going to have very much better municipal hospitals. I do not think we quite appreciate the importance of this fact. You know that in the conduct of our private, or some of our private hospitals, we are constantly confronted with problems that must lead us into direct touch with the municipal or whole range of charitable institutions, and I know the difficulties of meeting those problems because of the attitude of the municipal hospitals. Now, if we can get on a plane, by which your problems and my own in our hospitals can be met with the heads of municipal hospitals working in accord with us, it is going to do an immense amount for us. There is entirely too much charity being asked of hospitals that have no charity to give without borrowing the money or without terribly interfering with and embarrassing their own resources. The time, it seems to me, has come when this question of charity is going to take some quite definite form. It is an outrage, it is a disgrace to this country, your Committee thinks, the misuse and the abuse of the word "charity," which is present among us, and the first direction of improvement in these municipal hospitals must be the assumption on their part that they are not charitable institutions any more than a fire department is a charity institution, or a police department is; they are a part of the community's machinery for protecting itself, and the people who go to these institutions are quite as much entitled to that care as if they were paying for it. Now, when that change of attitude comes about, your hospital will not have to take in cases that properly belong in the municipal hospitals; or, if they are taken in, people will be permitted to determine where they wish to be taken care of at the expense of the community. So the improvement in the municipal hospitals is very vitally of interest to us, because it is going to release an immense amount of money that you are compelled now to spend in taking care of so-called charity, that otherwise you would be getting paid for out of the public fund.

The smaller hospitals of the country are perhaps more keenly, more delicately subject to variations in service than the larger hospitals. Momentum outside of the hospital world means more to them. The activity or the passivity in the medical profession means a tremendous lot to the smaller hospitals, because the profession is a factor of their strength and their activities are not quite the same as they are in large hospitals. You take a large hospital in the community and the medical man who revolts against its discipline very quickly finds himself on the sidewalk; in other words, the hospital is far bigger than any man. But in the smaller hospital, this is not quite true. In many communities, the man, because of the intimate situation in the hospital, is all powerful and he controls the institution rather than the other way about. He dominates it by a process of threats, perhaps, not less powerful and convincing because they are, perhaps, negatively stated. The man in a community who has a large clientele and who can deliver that clientele to any hospital that he chooses has it within his power to dominate the situation in a hospital that is weak financially and dependent, perhaps, upon his patrons. The last year has seen many radical innovations in regard to this particular feature. We have come to the time when the individual member of the profession is going to be far less important in a hospital than he has been heretofore. I have been watching that movement with a tremendous amount of interest. It is going to be brought about by a group activity, by group decisions, by group work. Two classes of people in this country can get all the benefits of modern medical science; first, the one who can get the greatest amount of service at the disposal of the medical profession is the patient who cannot pay for anything. He can have five or nine members of the medical profession in a hospital do anything and everything that the staff thinks is necessary for him. He is operated promptly, if he needs an operation. He is given the benefits of the individual opinions of the staff, because nobody is getting a fee for it and, consequently, there can come no jealousy. Because it is free, it is felt that he can be loaned, almost without any delicacy of feeling, to purposes of experimental work; I say that in the very highest sense in which it is used. Another class that can get good service is the millionaire to whom money is no object.

He can have five or nine consultants. Every member of the staff can be called in and a consultation fee paid to each and all the activities and facilities of the hospital are at his disposal.

But those two classes are comparatively small, especially the last. There is another class, making up perhaps 95 per cent. of the people in the country, who are sick, men, women and children. That 95 per cent. is made up of people, the heads of whose families are on wages or small or moderate salaries, people to whom the high cost of living has meant the difference between comforts and luxuries and their necessities, people who have not been able to save money, who have no bank account, no reserve force. The result is that when a member of such a family is taken to the hospital, he is in the hands of one physician or surgean or, perhaps, a specialist, but the question of money enters in at once. Let us say it is an obscure diagnosis, a diagnosis that cannot easily be made, the attending physician would like the opinion of some of the specialists in other branches, but that $25.00, or $15.00, or $50.00, or what not, looms large and he does not feel at liberty to call in a consultant. He himself, perhaps, is getting a very small fee. It follows that in most cases he will do just the best he knows how, because of the embarrassment of the situation in case a consultant is called in. In some smaller hospitals they are beginning to meet that problem, and this is the way that it is being handled: We shall see what the future is going to develop and the direction the movement is going to take, but at the present time this is about the process:

Three or five or seven or any number of medical people are created into a staff working homogenously, a teamwork staff in the hospital. When a patient enters the hospital—processes that must be very vaguely developed, because the condition there is the most acute and difficult situation in this whole problem—when the patient comes into the hospital, he is permitted to pay a fee, one fee for his hospital care, for the hospital services, and another fee that shall cover his medical expenses. Doctors cannot work for nothing and hospitals do not want them to, but the patient is entitled to the service. There is a fee charged, a medical or surgical fee, as you please, and that fee covers all of the service that that patient is going to need in the institution. If the patient is in the ten dollar ward, let us say, he can pay $25.00 or perhaps $50.00 for a medical or surgical fee; but if he is in a private suite, then he can pay in proportion for his medical and surgical services. That detail is being met in different ways, but it is being met. The result of it is that for one fee the patient can afford all of the services and facilities of the hospital and all the facilities and scientific attention known to medical science can be definitely at the service of the man in very moderate circumstances. I regard that as one of the most definite, one of the clearest lines of progress that the hospitals are making. This thing of being able, given some workable form, to furnish any patient, rich or poor, all of the services that medical science can suggest for a fee that he can afford to pay. We are going to have before we get through with this meeting, a paper on dispensary work for fees by one of the medical men. I believe that is exactly along the same general line. It is a marked progress, something very definite and clearly outlined.

So taking it all in all, we have some pretty general lines of progress to report this year. We are not working very hard, we are doing a good deal of thinking, we are helping a little here and a little there; we meet occasionally, talk it over, and in the meantime, while we are perhaps beating the tomtoms and raising a big hullabaloo about it, the people who are doing the real work in the hospitals are going along and they are away ahead of us already. Our hospital progress, this year, has, I think, been more than encouraging.

President: We will defer the discussion for action on this report until after we have heard from the Mayor's Secretary, Mr. Rainey, who has, I am very glad to say, come here to represent Mayor Rolph. Mayor Rolph could not appear, as he was taken ill this morning and a good many of his duties have to be assumed by his Secretary, Mr. Rainey. When you consider the large number of social obligations incurred by the mayor of a city with such a large exposition on its hands and perhaps more conventions being held than have ever before been held at a time in any city of the United States, we appreciate that the Association is being signally honored by having Mr. Rainey here to address a welcome.

Mr. Rainey: I regret exceedingly that it is my duty to make a speech this morning instead of the Mayor, but

I know that if he were here himself he could not throw more sincerity into the welcome than I do, because I have been particularly closely associated in our city administration with the hospitals and with the work which we have done in San Francisco, work that I feel sure is of interest to those of you who have had to do with hospitals. You know that San Francisco is probably one of the cleanest cities in the world. You know of the work that Dr. Blue did here to make our city a very lovely city, to keep our people out of hospitals. That work has been followed up by Dr. Broderick and by his successor in office, Dr. Hauselt, who is our very efficient incumbent at the present time.

I am the man in the City administration who comes in contact with the hospitals. They come to me when they want to get any one into the City and County Hospital and we have formed a policy along that line which I think may be interesting to you who come from other cities and should know something of the hospital conditions in the various cities. We have said, "Let the fellow who needs to go to a hospital most, be the first man to do so;" and that is the only way in the world you can run a charity hospital such as is run by the great San Francisco Hospital, which I hope you will all visit before you go away and to which I now extend you a very cordial invitation. I know that Dr. Broderick, who is the superintendent of the hospital, will be very glad to see you there at any time. It is a great hospital. We have spent three and a half million and a great deal of thought on the construction of that hospital.

We are just about to build a new tuberculosis hospital, and we have had ten of the best architects to be found in San Francisco in competition on it, because we think that the building of a hospital is one of the things on which no thought should be spared, on which the best that is in the community should be expended. We have gone to so much trouble to get our plans, in order that when that hospital is completed and thrown open the suffering public will find in it the best that modern knowledge has achieved for its relief.

We have so many good hospitals in San Francisco, which I hope you will visit, as the Southern Pacific Hospital, that beautiful little gem of a hospital, the Children's Hospital, and other hospitals that I hope and believe you will find a great deal in our town to interest you.

We have asked the world to come here during this Exposition. We think we have shown a welcome, we believe that, we certainly feel that way about it. San Francisco is the great metropolis of our western world, the city that represents the latchstring on the outside, the city that represents the spirit of the pioneers who came across the country in their ox carts, who came across the Isthmus in the old days, who came by any way they could because it was such a wonderful place to be in when they got there. We represent that spirit and we hope that you will make yourselves at home with us. We appreciate the value of your meeting. We want to have San Francisco intimately identified with the results that come from your Convention and I know that those results are going to be very material results, because such a gathering of men and women could not be held anywhere without good results for humanity accruing from the fact that they met and exchanged ideas among themselves, that each knows what the other is doing and what the other is thinking about and knows the other's plans and aspirations. So I say in this spirit of western hospitality, in the spirit of friendship to every one and especially of friendship to good people—we take in the good and the bad here in California with an equal heart, the good we want and the bad we want to reform—in the spirit of the old pioneers I make you heartily welcome to San Francisco, and hope that you will come to see us not only this one time, but that you will come back to us. In behalf of the people of San Francisco, whom I have the honor to represent in this humble way and to wish you welcome, I want to say that we wish you nothing but success, that the results of your meeting will be all that you desire, and that you will have good luck all the rest of your days.

President: On behalf of the members of the American Hospital Association, I desire to thank you for your many kindly words of welcome. It is less than ten years since this city was visited by a fire which almost destroyed it. The hospital growth that has taken place since is represented by some very fine institutions, the largest of which, and probably the best of which, is the new City and County Hospital. I think that you will all agree with me that this city and its people deserve considerable credit for this example of courage and civic pride in all that it has accomplished in the last ten years, and I believe it is the wish of the members of this organization that we extend a cordial invitation to the Mayor and his official family to attend the meetings of this Association.

Mr. Rainey: May I have just a word? I think we have a system of emergency hospitals here which is more or less unique. We own and operate all our hospitals, we make no lease with other hospitals, we take care of all our emergency cases, and, speaking for Dr. Weeks, I know when I extend a very hearty and cordial invitation to look over that system while you are here, you will be very welcome there. You will find that they are well equipped, well managed, taken out of politics absolutely, and I know you will find it very interesting professionally to run into one of our emergency hospitals if you have the time and that the men in charge will make you very welcome.

President: You have heard the report of the Committee on Inspection, Classification and Standardization of Hospitals. What will you do with it?

Dr. A. R. Warner, Cleveland: I move that this report be accepted and spread on the minutes of this Association.

Motion seconded. Question put. Carried.

President: Dr. Howland, who was to be present here to make a report of the Committee on Medical Organization and Medical Education, has found it impossible to be present. Dr. Burlingham, will you kindly read his paper?

REPORT OF THE COMMITTEE ON MEDICAL EDUCATION AND MEDICAL ORGANIZATION.

By Joseph B. Howland, M.D.

Assistant Administrator, Massachusetts General Hospital, Boston.

The progress in medical education and hospital reorganization which is going on so rapidly in this country is due to a large extent to the admirable analysis of our medical schools and their clinical facilities as presented by Mr. Abraham Flexner in his report to the Carnegie Foundation for the Advancement of Teaching in 1910, and to suggestions contained in a similar report on European medical schools and hospitals by the same author in 1912.

It is unnecessary for me to quote at length from these as you are undoubtedly familiar with them. We also had the pleasure of hearing Mr. Flexner on the same subject at the meeting of this Association in New York in 1911. All interested in medical education and hospital organization must be profoundly thankful for the Foundation which gave us such clear and thorough reports.

The impetus given by them is not in any sense spent and will not be for a long time, and the progress we have made this year is in line with suggestions contained therein.

TEACHING MEDICAL STUDENTS.

Of the forty-one large hospitals to which letters were sent, thirty-seven answered that they were used for teaching purposes. Of these, twelve stated that during the past year changes in teaching had taken place whereby students are now admitted to the wards as clinical clerks, a most favorable showing.

Those of us present who have had medical training undoubtedly got most of our under-graduate hospital experience in amphitheatres listening to clinical lectures and perhaps wishing we could get near enough to a typhoid patient to see the "rose spot" being demonstrated; or do more than see the crayon outline of the enlarged spleen as mapped out by the lecturer. Some of us studied medicine since the once popular amphitheatre lecture gave place to the bedside demonstration in which more students took part than could get near the patient's bed. How few of us had the opportunity of spending a month or more of our fourth year actually doing the ward work, rubbing elbows with the visiting physician, house physician, pathologist, chemist and interne. Once this place has been made for the intelligent student, he is missed if absent for a day. At the Massachusetts General Hospital four students at a time are given practical work for a month in a 20 bed ward.

They are under the charge of an instructor who if not a member of the hospital staff is given a temporary appointment which makes him a member of the hospital family and gives him some of the privileges and responsibilities of a staff officer. He teaches the student practical history taking and oversees his work in the clinical laboratory. The student is also under the direct observation of the house physician and internes and acts as their assistant. The history he takes is examined, corrected and if necessary is re-written by the student and then becomes part of the hospital record. He makes a physical examination; takes blood, sputum and excreta to the laboratory for his independent examination. Daily notes are written by him from dictation by the interne. The student also demonstrates his cases to the instructor and his classmates. In short, he is learning medicine by doing things for his patient and not alone by hearing others talk about the case. For the past two years at the Massachusetts General Hospital we have taken advanced students as clinical clerks for periods of one or two months in the summer and they are proving of such value that internes are very anxious to secure their services. This year the Harvard Medical School is to give credit to students for summer work done in the wards of the hospital. It is not alone to medical students of Boston that we offer this summer work but to those in distant cities. This we feel will prove of benefit in acquainting such students with the hospital and encouraging them to apply for internships later.

FIFTH YEAR OF HOSPITAL WORK.

We find that five medical schools have recently required for a degree, a fifth year of hospital work and that two more are considering it. The University of California, University of Minnesota, Medical Schools of Ontario and Nova Scotia are among those now requiring the fifth year.

In Pennsylvania a year of work in a suitable hospital is required for registration to practise in that state.

It is not too much to expect that we shall have many more schools follow their lead in the near future.

STAFF REORGANIZATION.

With other signs of progress in hospital work we find a rapidly growing tendency to change the old unorganized divided service into continuous services for chiefs and for the formation of committees of the staff and administration to have general oversight of the work.

One of the most conspicuous of the hospitals reporting such reorganization during the past year, was that of the Massachusetts Homeopathic Hospital, whose Superintendent, our late President Dr. Wm. O. Mann, gave much time and thought to the details of the new plan, and the increased efficiency which that hospital is sure to show will be a monument to Dr. Mann's tireless devotion to its welfare and good name.

Of the forty-one hospital superintendents to whom we wrote, only eleven stated that they still had divided services in all departments. Of these, four were not teaching hospitals.

While the more conservative hospitals are lining up in their reorganization to the newer requirements of teaching and research, and obtaining continuous service of chiefs, another important question is being considered by a few of the hospitals having close affiliation with medical schools. It is: Why should not clinical professors be salaried men giving full time to their work?

Is there not enough for these men to do in teaching, clinical study and research work as well as for the professor of physiology, chemistry, pathology or bacteriology? There is no doubt, I think, but that the reason clinical physicians and surgeons today make their teaching and hospital work incidental to their private practices, is, that there is more money in the latter method. I think there is little doubt but that these men, if they could afford, would prefer to devote their whole time to hospital work of one kind or another. As Mr. Pritchett says in his introduction to the Carnegie Foundation Report on Medical Education in Europe, "In just such proportion as higher standards of admission to the medical schools and higher requirements of admission to practice are enforced, in just such proportion will the body of men who compose the profession come to be actuated by the ideal of service rather than by the ideal of gain." This point of view should also be of interest to the trustees of hospitals. In the past and too often at present, hospital trustees feel that their full duty is done if the individual patients admitted to their wards are well cared for. The spirit of the present day calls for public service; service to the mass rather than the individual, and the mass will gain only if the great teaching clinicians are giving all of their time and thought in their professional work by co-operating to the fullest degree with the men engaged in laboratory work.

The question of providing adequate living salaries for these men is to my mind the only difficult one to be met. This I find to be the opinion of the hospital superintendents generally. How may it be accomplished? Medical schools rarely have endowments sufficient for the purpose. Is it not to some degree a proper expenditure of money given to hospitals for the care of the poor? If we agree that full time service of the chiefs of clinical departments will be of aid in public service to the public as a whole, it must equally benefit the individual.

Supposing that the money available for salaries from the school and general funds of a hospital are not sufficient, how may this be increased? Why not from fees from private patients treated in wards in the same hospital in which the poor are received? I believe this is the probable solution in this country.

It is quite outside the limits of this report to discuss the arguments for and against a private hospital in connection with a charitable institution: to speak at length of the advantages the poor may receive in the hospitals of some of our communities, and from which the well-to-do and rich are barred, no matter how much they need the agencies which may only be obtained there for diagnosis or treatment. Their admission would, if the hospital received the fees, instead of being paid to a few men, provide to a considerable extent suitable salaries for the chiefs and also allow living salaries to young men who desire to do research work, but who are now forced to do private practice to get a living. It would be a step in the right direction if a modification even of this plan could be more commonly adopted, namely to allow the chiefs to retain fees of certain patients sent by themselves for admission but not permitting consultation or operating outside the hospital or to receive fees from patients coming directly to the hospital.

The Peter Bent Brigham Hospital of Boston has adopted this method. Dr. Fred T. Murphy, Professor of Surgery of Washington University Medical School, St. Louis, advocates such a scheme.

The University of California Hospital reports, "We are definitely committed to full time pay chiefs of service as recommended by the Rockefeller Foundation. It may be necessary to have modified plans of full time departments." At present that hospital has full time paid chiefs in the departments of Obstetrics and Gynecology and in the department of Pediatrics.

The Professor of Surgery at the University of Minnesota Hospital is a salaried man giving full time to teaching and hospital work.

Dr. John Lovett Morse of the Children's Hospital, Boston, writes that that institution would accept full time chiefs in its medical department in connection with the Rockefeller Foundation.

The New Haven Hospital, in July, 1914, made an agreement with the Yale Medical School whereby its chiefs of service became full time paid men.

Dr. Winford H. Smith, Superintendent of the Johns Hopkins Hospital, writes as follows: "The departments of medicine, surgery and pediatrics have been placed on the full time basis. That is, the physician, surgeon and pediatrician in chief, together with their associates are on the full time basis. They are paid adequate living salaries not to engage in private practice. They may see patients in consultation and may charge fees, but the fee goes to the fund. They are the sole judges as to whether or not they care to see private patients; except the hospital reserves the right to admit private patients who are unable to pay medical or surgical fees, in which case the chief of service is responsible for the treatment of the patient. We still have part-time men connected with all three of these staffs, but the bulk of their work is in connection with the outpatient department and in teaching. The full time staff is responsible for the hospital service.

In my opinion the full time basis is ideal from every standpoint."

It is very gratifying to this committee to find so many hospital authorities adopting or discussing reorganization plans at this time, and I believe the year to come will be as fruitful of progress as has the past.

DISCUSSION.

President: You have heard this report. What is your wish?

Dr. F. H. Holt, Chicago: I move that it be accepted and printed in our minutes.

Motion seconded. Carried.

President: Before going on to the next paper, I wish to announce that the Panama-Pacific officials desire to present to this organization a bronze medal. The place of the presentation will be announced in the lobby at one o'clock so that all may see it, and it will be necessary for us to return very promptly so that we may finish the program we have before us this afternoon. The next on the program is, "Nomenclature and Classification of Diseases in Use in University of California Hospital," by Dr. James L. Whitney, University of California Hospital.

Dr. Whitney: I wish to say that I had hoped to be able to pass out at this time the list in its final form, but various delays have made it impossible to have copies for every one here. These are merely small pages taken out of the list to illustrate the general idea. I also wish to say that if any one is sufficiently interested to leave his name and address, we shall be glad to send them the completed form.

THE NOMENCLATURE AND CLASSIFICATION OF DISEASES IN USE IN THE UNIVERSITY OF CALIFORNIA HOSPITAL.

By James L. Whitney, M.D., San Francisco, Cal.,
Instructor in Medicine, University of California Medical School.

Three years ago the University of California Hospital took certain definite steps toward enlarging its field of usefulness both as a servant of the public and as a teaching institution. This involved much work of construction and revision in bringing various details of hospital-management into line with modern and efficient methods. Not the least important of these problems was that of finding or devising a system of nomenclature and a scheme of filing the hospital-records which should accomplish certain desired objects.

The first of these objects was uniformity of nomenclature in diagnosis. The second was a method of indicating to the clinician, by means of a classification of diseases as complete as possible, the degree of fulness and accuracy desired in this particular, and, further, of indicating the desirability of establishing in each case various relationships, chiefly etiological, which were felt to be indispensible for the purposes of scientific research. We wished, in other words, to have stated in the diagnosis not only each lesion present, but its cause, and its connection with other lesions. The diagnosis of "Bronchitis" is not complete unless we know the organism which causes it. The diagnosis of "Chronic Endocarditis, and Syphilis" is not satisfactory unless we are told whether the one was the cause of the other.

The third, and perhaps most important object was to have a system of filing which should render easily accessible the wealth of material too often permanently locked up in the hospital-records. It seems hardly necessary here to dilate upon the fact that the investigations carried on in a hospital case, frequently of little enough importance to the patient himself, often only acquire their chief value when they can be collated with similar investigations carried on in many other cases. Such collation is made almost impossible in the absence of a filing-system which will enable the researcher to lay his hands easily upon the desired material.

After considerable investigation it was decided to devise a system of our own, rather than to adopt any of those which were available to our hands. The reasons for that decision will be later discussed.

In the preparation of this scheme certain desiderata were constantly in mind. The first was completeness and detail. This involves the co-operation of the clinician, who is urged to name every lesion present, even when trivial. Not only complications are to be named (i. e., conditions dependent on the main lesion), but also coincident conditions not causally related. Completeness of definition is furthered by the elimination of vague terms. Accuracy forbids the use of such diagnoses as "Genito-urinary Tuberculosis," or "Cardio-renal Complex," demanding that each lesion present be named. Certain subsidiary conditions ought to be listed for the sake of future research, such as secondary anemia, passive congestions, hydrothorax, coma, etc., and we ask that all such be recorded, and referred in each case to the particular primary condition which was its cause.

We desire that the etiology of each condition be investigated and stated. This has been carried further in our system than in any other of which we know. Such lesions as those of syphilis and tuberculosis have very commonly been grouped under an etiological heading. We extend this method to include every case where the organism or other etiological agent has been determined upon. In the infections the organism itself forms the basis of division rather than the pathological lesion, thus, the heading Pneumococcus rather than Pneumonia, and Streptococcus Viridans, etc., rather than Rheumatic Fever. The same correlation of cause and effect is sought after in other diseases than infections, as Diabetic Cataract, Lead Neuritis, Amebic Liver Abscess. We try to connect even late results with their causes, as Poliomyelitis Deformity, Fibrous Endocarditis due to Rheumatic Fever, Feeblemindedness following Encephalitis.

In order to accomplish this accuracy and detail in diagnosis, it has been found advisable that a member of the staff spend a short time once a week in running through the current histories ready for filing, and see not only that the diagnoses conform to the system, but that all the desired secondary diagnoses and etiological data are indicated in each case.

The second consideration in this task was so to group the headings under which diagnoses are to be entered that the collator shall find his material ready assorted for his use. If tuberculosis were the subject of investigation, the tuberculosis section should include such lesions of every part of the body. If, on the other hand, diseases of the lungs were being considered, it was desirable that every lung-condition be found in one place. Therefore logic demands that tuberculosis of the lungs be filed both under the heading of tuberculosis, and under that of Diseases of the Lungs. Every other filing-system of which we know makes a more or less arbitrary assignment in such a case to one position or the other, but we see no particular objection to the idea of filing a single diagnosis in more than one place. It makes a little more work in card-writing, but it also simplifies the cataloguer's work. The rule is: "In case of doubt as to whether a diagnosis belongs in one place or another, file it in both."

The same system of double-listing holds for complications. We enter a case under kidney-diseases as "Chronic Nephritis with Coma," and under the nervous system as "Coma due to Nephritis," and in the latter place will also be found "Coma due to Diabetes," "Coma due to Brain-trauma," etc.

This system of grouping cases of similar nature has already proved a great convenience not only in certain statistical researches made in this hospital, but in preparing lists of patients to be sent for for demonstration to students.

The third desideratum was felt to be flexibility,—that is, the system should be capable of later additions and alterations in the light of new knowledge. Every method which involves the use of numbers or other tokens in designating diagnoses is very ill-adapted to later alteration. We know of one hospital which embarked on a system of such a character years ago, and now finds that new diagnoses are often impossible to list, and that changing the system is prohibitive, since it would practically amount to copying every card for years back. For this reason numbers have not been used as a vital part of this scheme. A certain number of such tokens appear as guides to the eye, and for purposes of cross-reference from one section to another, and from the index; but these tokens are not used in the card catalogue, and are likely to be changed with every new edition. As it stands, whole sections can be shifted if so desired—e. g., all the Syphilis cards may later be changed from the Section of Infectious Diseases to that of Animal Parasites, if new knowledge seems to warrant it.

Finally, as to practicality. It is to be taken for granted that the maximum of value cannot be attained without some complication of the system. We expect always to have a trained cataloguer to do the work of filing, and anticipate that, in addition, one member of the staff will necessarily continue to give a half-hour a week or so to looking through the histories. It may be said, however, that this scheme has been found satisfactory in this hospital in two years of use by cataloguers who were not previously trained, and, although some doubts arise and mistakes are made, these are probably not more frequent than with any other system.

An integral part of the scheme, following the tabulations, will be a very full index, containing not only the terms as used in the classification, but all possible synonyms, and even many terms which are refused standing, with cross-reference to the section where the approved terminology may be found.

No full description of the classification can be attempted in this place. It will be observed that the first seven main divisions are on the basis of etiology, viz., Infections, Animal Parasites, Constitutional Diseases, Poisons, General and Traumatic Effects of External Agents, and New Growths. To these are added No Disease and No Diagnosis. The remaining fourteen headings represent anatomical systems, under which as subheads will be found the individual organs and tissues, and under these, again, the appropriate diagnoses. With few exceptions the various heads and subheads are arranged alphabetically, so that a diagnosis which is not given in the list can always be interpolated in its proper place. In this way we avoid the necessity for such a heading as "Unclassified."

Every system which involves codification means that many rather arbitrary decisions have to be made, and not even consistency is always attainable, although it is the end which is constantly being sought. In the enormous amount of detail involved in this classification, compromises are inevitable.

In the matter of the choice of terms, it has been generally the rule to adopt that term which seemed to be supported by the best usage, though where possible preference has always been given to simplicity, to English rather than to foreign words, and to good etymology,—and of this last it ought to be said that no other science has such a collection of bad etymology as medical terms display. Anyone dabbling in terminology must strongly feel the need of an authoritative body to revise thoroughly medical terminology, and bring medicine into line with all other sciences in this respect. In the preparation of this classification, however, temptation has been resisted, and nothing very radical has been done in the way of offering substitutes for terms where long use rather than respectable antecedents has given them standing.

One instance may, however, be given in which, for the sake of clearness, some departure has been made from common usage. This is in relation to the adjectives **acute, subacute,** and **chronic.** **Subacute** is not accepted in any case, occupying a position entirely too vague between the other two. In most instances it can be replaced by acute. **Acute** and **chronic** are very unfortunate words, since their meaning is never clear. Ordinarily they imply a short or a long duration of the process, but no fixed limit can ever be set. Sometimes, as in the case of nephritis, acute means rather self-limited, while chronic implies incurability. In other instances acute is taken to mean a more violent form of the disease than subacute or chronic, quite apart from the time-element. Again, the pathologist uses the terms wholly on the basis of the kind of cells present on microscopical examination. According to this usage a chronic (i. e., a fibrous) peritonitis can develop in a week, which to a clinician seems a good deal of an absurdity. In this sense chronic often signifies merely the scars that follow a once active process.

To meet this difficulty, it seemed best to discard at least the word "acute" in many instances where the situation was worst. For example, an infectious endocarditis is essentially the same process whether it lasts a week or two years, yet a two-year old process can hardly be called "acute." In this case we suggest the use of the terms "active infectious," and "chronic fibrous endocarditis." Inflammations of the serous surfaces offer a similar difficulty. In the case of pleurisy, for example, we recommend the terms "fibrinous pleurisy"; "fibrous pleurisy," and "pleurisy and effusion."

Another detail which perhaps deserves mention is the problem of handling unsatisfactory diagnoses, for example in cases where the cause of condition has not been satisfactorily cleared up, perhaps because of lack of opportunity of complete examination. A number of such unsatisfactory diagnoses have been included in the list, to be used as infrequently as possible. Another method is to list an unspecified diagnosis under a more general heading: for instance, "heart-disease" may be listed directly under the main head of "Heart," when the exact nature of the lesion is not known.

I think that more than a word of apology is called for to justify the presentation of a new classification of this kind. The more one works with medical statistics, the more he is impressed with the great need for uniformity of nomenclature and classification throughout the country, or throughout the world. Examination of text-books of medicine shows that no two classify diseases by the same method, and often the same terms are used by two authors with widely different meanings.

Keenly as was felt the desirability of following some standard system, it seemed to us more and more evident that the optimum system had not yet been reached. The classifications which we considered most fully were the International List of the Causes of Death, the Bellevue Nomenclature, and those of the Massachusetts General Hospital, and Stanford University. Two of these have, it is true, been rather widely copied by hospitals throughout the country. At the same time we felt that none of them would do for us exactly the service we had in mind. For example, they will not allow, without modification, the entering of diagnoses in more than one place, a point which we consider of great advantage to the statistician. Also, none of them provided for the listing of subsidiary diagnoses to the extent which we wished, and none went far enough in the effort to correlate each lesion with its etiological basis.

In a general way we follow fairly closely the methods of the Bellevue and Massachusetts lists, only going farther in the same direction. Stanford has aimed at simplicity by furnishing only an alphabetical list of diagnoses without classification, with full cross-reference to show the proper place for cataloguing each term. The index of our system will give us much the same advantage, and we can still preserve those features mentioned above on which we lay so much value.

The justification of our wisdom in devising our own system will be in the way it works out, and in its reception by others. We believe the principle to be right, and hope that others will copy us. And if there are improvements to be made in it, we believe it will be found much more amenable to alteration and modification than the other schemes mentioned.

It should here be added that many other members of the Hospital Staff have generously co-operated, sometimes to the extent of drafting whole sections in which they were particularly interested. For the general plan the writer assumes the responsibility.

(The following sample pages of the classification were distributed at the meeting.)

Classification of Diseases for Use in the University of California Hospital.

MAIN DIVISIONS.

A. Infectious Diseases.
B. Diseases Due to Animal Parasites.
C. General Constitutional and Nutritional Disorders.
D. Poisoning.
E. General Results of External Agents.
F. Traumatic Effects of External Agents.
G. New Growths.
H. No Disease.
I. No Diagnosis.

I. Diseases of the Blood.
II. Diseases of the Circulatory System.
III. Diseases of the Digestive System.
IV. Diseases of the Ductless Glands.
V. Diseases of the Ear.
VI. Diseases of the Eye.
VII. Diseases of the Female Generative System.
VIII. Diseases of the Locomotor System.
IX. Diseases of the Lymphatic System.
X. Diseases of the Male Generative System.

XI. Diseases of the Nervous System.
XII. Diseases of the Respiratory System.
XIII. Diseases of the Skin and Appendages.
XIV. Diseases of the Urinary System.

A. INFECTIOUS DISEASES.

[In every infectious disease name all lesions found. In this list not all possible lesions can be given as subheads for each organism. In a few cases (Gonococcus, Pneumococcus, Syphilis, etc.) subheads are given in some detail. They may be used as examples for other infections where similar detail is not given. Avoid general diagnoses like Actinomycosis, Syphilis, etc., using these only when the disease is not localized.]

1. Actinomycosis.
    III. 6 Liver.
    VIII. 1 Bones.
    IX. 2 Lymph-nodes.
    XII. 4 Lungs.
    XIII. Skin and Subcutaneous Tissues.

2. Anthrax.
    I. Septicemia.
    XIII. Skin and Subcutaneous Tissues.
        Malignant Pustule.
3. Bacillus Aerogenes Capsulatus Infections.
4. Bacillus Mucosus Capsulatus Infections. (For subheads see Pneumococcus.)
5. Blastomycosis. (Name part involved and lesions.)
6. Cholera, Asiatic.
    a. Carrier.
7. Coccidioides Infections.
8. Colon Bacillus Infections.

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33. Rabies.
    a. Bite from rabid or suspected animal.
34. Relapsing Fever.
35. Rheumatic Fever Complex. (In case organism is determined, list diagnosis under heading of this organism, with same subheads.)
    II. 3. f Endocarditis.
        Active.
        Chronic Lesions resulting from.

A. INFECTIOUS DISEASES (Cont.)

II. 5. a Pericarditis.
    Fibrinous.
    With Effusion.
IV. 6. k Thyroiditis.
VIII. 4. b. i Infectious Arthritis, Rheumatic.
XI. 1. h Chorea Minor.
XII. 8. c Pleurisy.
    Fibrinous.
    With Effusion.
XIII. Skin Lesions.

36. Rocky Mountain Fever.
37. Rubella.
38. Scarlet Fever.
    a. Acute Nephritis.
39. Sporotrichosis.
40. Staphylococcus Infections.
    I. Septicemia.
    II. Circulatory System.
        3. Heart.
            f. Endocarditis.
        4. Mediastinum.
            a. Abscess.
            c. Mediastinitis.
        5. Pericardium.
            a. Pericarditis.
        7. Veins.
            b. Thrombophlebitis.
    III. Digestive System.
        2. Peritoneum.
            j. Peritonitis.
        6. Liver.
            a. Abscess.
    IV. Ductless Glands.
    V. Ear.
        2. Auricle.
            d. Perichondritis.
        4. External Meatus.
            e. Furuncle.
            f. Otitis Externa.
        6. Mastoid.
            b. Mastoiditis.
        7. Middle Ear.
            c. Otitis Media.

II. DISEASES OF THE CIRCULATORY SYSTEM.

3. Heart.
    - a. *Adams-Stokes Syndrome.
    - b. *Angina Pectoris.
    - c. Aneurism of Heart.
    - d. Congenital Heart Lesions (unspecified).
        - i. Defective Interventricular Septum.
        - ii. Open Ductus Arteriosus.
        - iii. Open Foramen Ovale.
        - iv. Pulmonary Stenosis.
    - e. Disorders of the Heart-beat.
        - i. *Arrhythmia (unspecified).
        - ii. Auricular Flutter.
        - iii. *Bradycardia.
        - iv. Extrasystole.
            - Auricular.
            - Ventricular.
        - v. *Fibrillation.
            - Auricular.
            - Ventricular.
        - vi. *Heart-block.
            - Complete.
            - Incomplete.
        - vii. *Pulsus Alternans.
        - viii. Sinus Arrhythmia.
        - ix. *Tachycardia.
            - Paroxysmal.
    - f. Endocarditis. (Name Valves and Lesions, e. g. Chronic Fibrous Endocarditis with Mitral Insufficiency.)
        - i. Mural.
        - ii. Valvular.
            - a. Active Infectious.
            - b. Chronic Fibrous.
    - g. Fatty Heart.
    - h. Gumma.
    - i. Hypertrophy.
        - i. Athlete's Heart.
    - j. Hypertrophy and Dilatation.
    - k. Myocarditis.
        - i. Toxic (Cloudy Swelling).
        - ii. Acute Interstitial.

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*Use only as secondary diagnosis, giving cause of condition.

        - iii. Chronic Interstitial.
        - iv. Myocardial Insufficiency.
    - l. Neurosis (unspecified).
    - m. Rupture.
    - n. Thrombosis, Mural.
    - o. Valvular Lesions. (Specify if lesion is decompensated.)
        - i. Aortic Insufficiency.
        - ii. Aortic Stenosis.
        - iii. Mitral Insufficiency.
        - iv. Mitral Stenosis.
        - v. Pulmonic Insufficiency.
        - vi. Tricuspid Insufficiency.
        - vii. Tricuspid Stenosis.
        - viii. Aneurism of Valve.
    - p. Wound.

DISCUSSION.

President: The question of nomenclature of classification of diseases was given consideration by this organization when the committee made its report at Detroit three years ago. The committee came to the conclusion—I had the honor of being one of the members of that committee—that such a question should be taken up—that is, of proper nomenclature and classification—not by this Association, but that it was more of a question to be taken up and a proper system adopted by the American Medical Association. This is the first paper of the kind that we have had presented here, to my knowledge, in several years. It is a very useful question from the standpoint of hospital administration, in that by its means only can we keep our records in proper shape. Is there any discussion?

Dr. Kilgore, of San Francisco: Mr. Chairman, I have been somewhat associated with Dr. Whitney and have known of the work that has been done in developing this nomenclature which he proposes and I would like to emphasize just one or two things which he mentioned, and which I hope will be fully appreciated. First of all is the great desirability of uniformity in hospital nomenclature and on account of that I know that some will object to having any new system brought forward. The feeling I know has been in some quarters that we already have too many competing nomenclatures in the field. I feel it is a very desirable thing to have uniformity and I should, for one, be not in favor of endorsing any new scheme in the field unless it had ample reason for coming forward. I feel that this is true in regard to the nomenclature that Dr. Whitney proposes, and I earnestly ask all those who feel the need for uniformity and who object to having new things brought forward to reserve their opinion on this until they have had opportunity to look over the nomenclature in printed form, which I am sure Dr. Whitney will be glad to send any one who asks for it. I think the matter of elasticity and ability to change according to later knowledge of the etiology of a disease is a very important thing and one which this system covers fully. I think we ought not to dodge a scheme merely because it is a little more complicated and will require a little more work. As I understand it, this system will require somewhat more cards in filing. There may be several cards on a given condition. That will call for more work on the part of the cataloguer. A scheme should not be avoided because it is complicated if there is good reason for that and they get good results and results which are valuable; we do not object to it then from that standpoint.

PRESIDENT: This completes our program for the session and the meeting is adjourned.

TUESDAY, JUNE 22—AFTERNOON SESSION.

THE EFFECT OF LEGISLATION UPON SCHOOLS OF NURSING IN CALIFORNIA.

By Miss Anna C. Jamme,

Secretary, Board of Registration of Nurses, Sacramento, Cal.

The California legislature of 1913 enacted two laws governing training schools for nurses in this state: The Nurses Registration Act and the extension of the eight-hour law for women to include student nurses. The former was initiated by the California State Nurses' Association, the latter by the Labor Council of the Federated Trades organization of San Francisco.

The act providing for examination and registration of nurses administered by the State Board of Health, and the law governing the hours of duty of the student nurse, administered by the Bureau of Labor Statistics, are distinctly independent of each other in the method of administration, but very closely related in their operation.

The administrative machinery of the Nurses Registration Act is a department under the State Board of Health, in charge of a Director, who is a registered nurse. This is in accordance with the organization of the State Board of Health, which consists of seven Bureaus, each in charge of a Director. The law provides that the Director shall perform all duties required by the act, including inspection of training schools. The requirements for examination as specifically outlined are that a nurse shall be a graduate of an accredited training school. The requirements of the school are not mentioned, other than that it shall be attached to, or operated in connection with, a hospital or hospitals, giving a general training and a systematic, theoretical, and practical course of instruction.

Upon this basis the State Board of Health outlined definite requirements from which the schools could arrange their schedule of instruction. An inspection was made of every training school in the state and most hearty co-operation in the work was found to exist. Many small schools are scattered throughout California, in the rural districts, where a hospital is essential, and in these schools, frequently, very excellent instruction is carried out. In several, affiliation with larger hospitals has been arranged for the purpose of giving the student a broader experience in bed-side instruction.

It is interesting to note that soon after the passage of these laws, fifteen hospitals closed their training schools of their own volition. No steps had been taken by the State Board of Health, which preferred to allow every opportunity for the schools to raise their standards before taking action.

The general effect upon the schools may be briefly stated as follows: In schools maintaining standard courses of instruction, little or no change; in schools below standard, the curriculum was enlarged, instruction systematized and brought up to official requirements. Text books have been adopted where it was found that none were used and in cases where no class equipment was supplied, not even a black-board, an effort is now made to furnish the necessary facilities for class demonstration. In about twenty-five per cent of the schools, special instructors have been added and in fifty per cent, a course in dietetics established. In many, special diet kitchens have been provided and equipped, for the purpose of class instruction.

One result of the law has been a more accurate and systematic method of keeping the records of the student's theoretical and practical instruction. The Bureau of Registration supplies the school with printed forms to be filled out by the Superintendent of Nurses on the completion of the course of each student and this record is forwarded to the Bureau and kept on file. It embraces the number of lectures and classes attended in each year, the rating on examination of each subject, the amount of practical experience in each department of the hospital and the record of efficiency. This has stimulated the schools to keep records in a methodical manner and it enables the Bureau to obtain exact data of each graduate and also to be constantly in touch with the class of instruction given in every school.

It may be said, therefore, that the effect of the law upon the individual student is a matter of personal concern. From the day she enters school, she has constantly before her the fact that she is preparing for an examination by the state and that during every day of instruction, whether in class, at the bed-side, in the operating room, or in any branch of service, her general standing is a matter of record. It is hoped that in the near future the student's record in training will be given a definite credit value in her state examination.

The relation of the Eight-Hour law to the Registration Act has been noteworthy. By the systematic arrangement of eight hours of duty each day, a certain portion has been set aside for study. The opportunity thus given for preparation of class material has produced a marked change in the character and results of class instruction. Medical lecturers who have been questioned generally on this point, unanimously agree that the students show far more interest and are able to grasp the subject matter with greater facility, in the absence of the physical and mental fatigue which characterized the classes before the passage of the law. Under the system of longer hours of duty, it would have been impossible and even ludicrous to insist upon the minimum requirements of lectures and classes as now laid down by the State Board of Health.

Notwithstanding its present permissive form, the Registration Act in the very brief period of its existence has demonstrated the value of state control of training schools. The impetus given by the large number of nurses registered (4,872) during the first year is, in itself, a guarantee for the future and of what may be accomplished by students who desire the recognition and special certificate of the state.

It has been gratifying to observe the number of recent graduates who have availed themselves of the two examinations so far held by the State Board of Health. At the first examination in Sacramento, on December 5th, 1914, five months following the close of the waiver, forty-seven applicants presented themselves for examination and of this number, eleven came from the southern part of the state, which entailed an expense for each of at least forty dollars. In the examination held in Los Angeles, on May 1st, 1915, eighty-six were present, twenty-five having come from the northern part of the state at a like expense. This demonstrates the value the young graduate places upon registration. From data on file in the Bureau, one hundred and twenty-eight students have been graduated since December 1st, 1914.

Viewing the inauguration of this work from the headquarters of the Bureau at the capital, convinces me, that administration of a Nurses Registration Act by a State Board of Health, has been eminently satisfactory. The close relation of the modern nurse to preventive medicine as well as to medical science, presents a natural affiliation. Control and direction by an independent authority having a close and sympathetic interest has avoided friction and prevented strife. The policy of the State Board of Health has been one of generous and helpful assistance, criticism and condemnation being avoided. By an intelligent, friendly, and at the same time impartial attitude, the good will and support of those concerned has been secured.

The readjustment of educational ideals notably in vocational training presents an opportunity for training schools in this state that is unprecedented in the history of nursing. Everywhere the trained and specialized woman is in demand. The scope and activities of the trained nurse are no longer limited to the hospital and the home, her education and training are extending to far wider fields. The time has arrived when the training schools of the state should be in line with other vocational schools and the training of a nurse placed on a parity with the training of a teacher.

The effect of legislation providing for the extension of the Eight-Hour law for women to include nurses has been momentous. It was immediately necessary to increase the number of student nurses in each hospital at least one-third and to arrange a working schedule for the hours of duty, to cover seven hours each day for six days, and six hours for the seventh day, or, to arrange that one day in seven be free. It was also necessary that a similar schedule be arranged for the nights of each week. This was found difficult in the majority of hospitals, especially, in the operating and maternity departments, where the work could not be regulated according to any definite and circumscribed time. Even in the best regulated and well-ordered hospitals, a certain amount of confusion results owing to the frequent change of nurses.

One physician has stated, that a patient requiring throat applications, received the attention of seventeen different nurses in twenty-four hours for this particular service. Another instance is that of a school teacher in a hospital ten days, because of an attack of pneumonia, who, on leaving, desired to show her appreciation of the services rendered by the nurses. She requested the superintendent to furnish a list of those who had been in immediate attendance during her illness as she wished to give a little party for them. The list showed that thirty-six nurses were eligible for the party.

All special nursing by student nurses has been discontinued and placed in the hands of graduates. An exception to this is found in the hospitals controlled by the Seventh Day Adventists where three students are detailed for continuous twenty-four hour nursing and the patient pays the same amount as for one graduate nurse, namely, twenty-five dollars per week. Nursing in contagious diseases has been interfered with to some extent. Where a contagious department is connected with the hospital it has not been found practical to detail three students on a case thereby weakening the general nursing staff.

Interference with continuity of work has been keenly felt by the smaller hospitals in the rural districts, where this is largely of the emergency type and where pressure may exist for short and intermittent periods. The compulsion of leaving duty often at a moment critical to the patient and of great value, instructively, to the nurse is of very serious import. Upon the student nurse is placed the necessity of very close observation of her time of daily service and of measuring that service more by the clock than by the exigencies of duty and the quality of her work. One institution has installed a time clock and makes it necessary for all nurses and female employees to punch it on time. It has been repeatedly stated that students have informed the superintendent that their time was up when asked to perform some immediate service for a patient. The superintendent was helpless in insisting that this should be done, owing to the fact of an alien authority in her school, controlling this part of her responsibility and prerogative. In many instances the spirit of the work has suffered greatly and the student has become mechanical, especially where the law has been kept in unpleasant prominence.

The utilization of the leisure time has called for serious consideration. In schools where none, or at best, poor provision, is made for the social and intellectual life of the student, this time is apt to be spent on the streets, in cafes, "shows," or elsewhere. On the other hand, where schools provide comfortable and attractive living rooms, study rooms, libraries, tennis courts, and arrange for a certain amount of social entertainment, the student finds her recreation in the "Nurses' Home" and surroundings and does not wander abroad unduly for necessary diversion.

No special data has been obtained concerning the effect on the health of students by the provisions of the law. The general health of the schools is affected by causes other than length of hours. Housing conditions, food, service, methods of discipline and the school atmosphere are controlling factors. While excessive hours of duty, often under great strain, is a most vital contributory cause, it should not be considered to the exclusion of other factors in estimating the health standard of the student nurse.

It is significant that all schools are reporting an increase in the number of applicants and more generally from women of good education and general preparedness.

The effect of the law upon hospitals is in turn having a distinct influence upon the school. The increase of students and the decrease in revenue from the special work of the student nurse has seriously affected the finances of the hospitals. In a paper on this subject read before the American Nurses' Association in April, 1914, Miss Lila Pickhardt, Superintendent of Nurses of the Pasadena Hospital, says, "Just how great this revenue was, may be estimated when we have reason to believe that in some institutions, forty per cent of the nurses were on special cases. Frequently probationers were assigned to special duty and some have estimated that two-thirds of the time while enrolled as student nurses was given to special duty."

Upon the superintendent of the training school has fallen the burden of adjusting conditions to meet the requirements of the law. It is remarkable to see with what spontaneity each superintendent arose to this demand, and worked out the problem of fitting herself to meet emergencies, under the limitations of an eight-hour service in one day or night, and forty-eight hours in one week.

The penalty clause has been in abeyance since the passage of the law, owing to the question of unconstitutionality, brought up in the courts of California, by means of a test case. The case was ultimately taken to the Supreme Court of the United States and a decision was rendered on February 23rd, 1915, of which the following is a summary: "The same restriction as to the hours of employment of student nurses in hospitals is not an unconstitutional violation of the freedom of contract, as these persons, upon whom rests the burden of immediate attendance upon and nursing of the patients in hospitals, are also pupils engaged in a course of study and the propriety of legislative protection of women undergoing such a discipline is not open to question."

During the recent session of the legislature an amendment was initiated by a group of hospitals with the object of providing for three months special nursing in the third year of the course. While this was introduced as an amendment to the Nurses Registration Act, it left the power of enforcement to the Bureau of Labor Statistics. It was defeated on the ground of incompatibility with the Registration Act and that it was an endeavor to utilize the student nurse as a source of revenue to the hospital during this period.

It has long been apparent to all intimately concerned in the training of nurses that the old method transmitted by custom, of long hours of duty to test the endurance of a nurse, will not now suffice. The period of the survival of the fittest has passed. Many a fine woman has been lost to the school, to the profession and to the state, because she could not measure up to the test of physical endurance. Furthermore, we know full well, that many would have been attracted to the training school, had reasonable working hours prevailed.

Science has revolutionized medicine and philanthropy, as well as industry and warfare, and has given us new standards and new view-points. These standards are influencing and forcing re-adjustment in all branches and they have extended to the education of the nurse. The present is a period of acute transition in training schools, and in this transition there is a conflict of opinion, and in many cases an overtaxing of the power of adjustment. This is inevitable, because of the complex character of the relation of the training school to the function of the hospital. Methods for the conservation of the health of the student nurse have been employed, on a basis of the methods used for workers in industry. This presents the difficult problem of the adaptation of the inflexible rules of industry, to the ever varying conditions of work which prevail in hospitals.

It is not impossible that the ultimate solution of this problem will be found in evolving a flexible scheme which shall meet the specific needs of the training school and of the hospital. This scheme should insure, not only the safe-guarding of the nurse from unduly long hours of duty, and from the dangers of exploitation, but should enable her, under favorable conditions for her intellectual, technical and spiritual growth, to secure the training which modern social conditions are demanding.

In closing this brief recital of California's part in fostering and uplifting our profession, I can not escape the consciousness, that at no time since the nurse first became a factor in our social economy, could I have spoken of her calling with more dramatic coloring.

During the past eight months in Europe, hundreds of nurses, of every nationality, have been performing unprecedented tasks, and helping amidst a hitherto unknown carnage, to achieve results that medicine and surgery had so far failed to accomplish. Even in their ranks, there has been a high mortality. The greater deadliness of modern warfare, has meant a larger measure of exposure, while the range of modern artillery has greatly extended the danger zone. The testimony of all nations is, that they have done their full duty "even unto the end."

As I write, there comes before me, a message of our President, fraught with such momentous possibilities for American nurses, may I not quote the words of a great American, "They here gave the last full measure of devotion." May we not "here highly resolve that these dead shall not have died in vain"? And for my sisters of California, I say we are ready whenever and wherever our country calls on us for service.

THE EIGHT-HOUR LAW, ITS PRESENT AND ITS FUTURE.

By Anne A. Williamson, R.N.
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Los Angeles, Cal.

Much has been written and spoken about the so-called eight-hour law in California and now after two years experiment with this trying piece of legislation an analysis of the results and of the situation today will, it is believed, prove interesting and instructive. All those actively engaged in nursing understand that this so-called eight-hour law of California is not the eight-hour system which has been adopted successfully in several of the leading Training Schools of America, but our California law is really a six hour and seven hour law instead of an eight-hour law, as our pupil nurse here is only allowed to be on duty seven hours six days in the week and six hours one day in the week. Under this law the hospital and the training school methods in California have become so complex that a superintendent whose experience had been entirely in another State would be quite bewildered upon taking up the work here. She would doubtless in time develop great respect for those whose duty it has been to blaze the trail.

One serious effect of this law has been that it has greatly increased the expense of hospital care to private patients. Instead of the State encouraging those who are struggling to be independent and to care for their own, this law has caused an increase of expense of maintenance in all hospitals, and private hospitals have been obliged to increase their rates from 10% to 20%. In addition to this hospitals could, previous to the enactment of this law, furnish patients of moderate means with a special nurse at $20.00 per week. Now for every patient, whether indigent or just on the border line, whose condition demands a special nurse, a graduate nurse must be employed. This increases the expense to the patient or to the philanthropist from $20.00 a week to at least $32.50 or $35.00 per week.

The graduate nurse must of course have her $25.00 a week wage, and the hospital must have from $5.00 a week to $10.00 per week for the board of this nurse. Instead of the State doing all it can to encourage the struggle to keep out of the dependent, or pauper class, it has by this law greatly increased this handicap and made the fight against disease a tragedy to the self-respecting wage earner. The work, under this law, becomes unsatisfactory to the nurse, to the doctor, and terribly trying to the patients themselves, as there must necessarily be frequent changes of nurses. This being the case, it is hard to hold anyone responsible for anything and should a mistake occur in the carrying out of orders, as mistakes will now and then occur, in spite of eternal vigilance, it is the work of a Sherlock Holmes to trace it to the source and place the responsibility of the error where it belongs.

Particularly trying to both patients and nurses is the change that comes in the middle of the night when all should be as quiet as possible, so that the sensitive and nervous patients may not have their first sleep disturbed, and it is almost impossible to change a force of from twelve to twenty nurses with a correct transmission and explanation of orders without more or less noise and subdued, but disturbing, conversation. This disturbance, slight though it may be, may result in a restless night for quite a proportion of the patients.

In the operating room it has often been necessary to change a nurse at a most critical time if we would obey the law, and the surgeon of course feels outraged when he realizes he has a nurse assisting him at the close of an operation who was not with him at the start. A still greater injustice is done to the nurse, doctor and patient in the maternity department. It is very unusual for a nurse to be able to stay with a case from the beginning of labor until its closing. The change of a nurse during labor is terribly exasperating to the woman who is going through this ordeal. The nurse herself, if she has any of the instincts of a true nurse, sympathizes with her patient and desires to stay with her at least until the child is born. In this, as well as in many other conditions, it is demonstrated that arbitrary, fixed laws that may be applied to the making of dresses, the washing of shirts, or the woman in the department store, cannot be unyieldingly applicable to those who are responsible for the care of the sufferer from disease, accident or the throes of maternity.

The interest and the enthusiasm of the nurse is gone. It went when the so-called eight-hour law came, and no institution can hope for willing, faithful service from those who are simply putting in time.

The change in the pupil nurse is now quite apparent and those graduating this year have been for two years under the law, and as we view the result we tremble as we realize what a third year of this training, or rather lack of training, will probably produce.

Surely the old saying that

> "Satan finds some mischief still
> For idle hands to do"

is beautifully illustrated in our schools at the present time.

In order that the hospital service shall run smoothly with so many changes in the nursing staff, it is absolutely necessary that some nurses shall not begin their seven hour or six hour day, as the case may be, until the middle of the morning or later in the afternoon and there is great disinclination on the part of those nurses to be up for breakfast, not because they are tired and need the rest, but for the simple reason that they are not obliged to rise. Consequently the best hours of the twenty-four are often idled away and it is a rather listless nurse who reports for duty after a morning spent in bed.

One argument that was brought forward in favor of the eight-hour law was that the class work would receive so much better attention, but we notice with much disappointment many more requests to be excused from class than formerly, and a decided lowering of the average grades, with numerous complete failures, which were rare a few years ago. It is also necessary to hold more classes in the evening than in former years, as the class relief is too complicated to be undertaken for the early afternoon hours under present conditions.

The health of the pupils under the new law is another matter for serious consideration and we quote the actual figures taken from the records of a training school in the southern part of the State.

AUGUST 1911 TO AUGUST 1912.

Average number of pupils	97
Days lost on account of illness	392
Dismissed on account of illness	4
Resigned on account of illness	1

AUGUST 1912 TO AUGUST 1913.

Average number of pupils	95
Days lost on account of illness	356
Dismissed on account of illness	1
Resigned on account of illness	3

AUGUST 1913 TO AUGUST 1914.

Average number of pupils	92
Days lost on account of illness	631
Dismissed on account of illness	7
Resigned on account of illness	11

These figures are rather startling and most convincing, because for the two years preceding the passage of the law we have practically a similar condition, and for the year following its passage we have almost double the days lost and dismissals with a lower average number of pupils.

This increase in ill health is due to the pupil nurses having so many hours that are not under careful supervision. It is doubtless the aim of those who have been the instigators of this forty-eight hour per week law to place the hours of the pupil nurse on the same basis as the hours of the factory girl or the laundry employee. They should remember that the girl working in the factory, the laundry or the department store is on an average from one hour to one and one-half going to and fro between home and factory, while the pupil nurse has her warm breakfast and her warm luncheon and goes to her patient without any loss of time waiting for and riding on street cars or jitney busses.

On one day of the week the pupil nurse is only permitted by the law to be on duty six hours, that is, it takes four shifts of nurses at six hours each to cover the twenty-four hours. The other six days of the week a nurse is allowed to be on duty seven hours out of the twenty-four. During these days, after having three shifts of nurses of seven hours each, another shift must be called upon to cover the three hours of the twenty-four still remaining.

Frankly speaking, conditions in California training schools as they now exist do not produce a finished product in the nursing profession in either health or ability. Training must be rounded out and completed after graduation, when the professional woman is freed from the espionage provided by the present law; in other words, she must get her knowledge and experience in taking the full responsibility of a case, maternity, medical or surgical in the private home, in the same way that the doctor does who has not had an interneship. When an evil exists we must look for the remedy and that is what the hospital authorities in California are doing, but with little help from outside sources. It seems at times that we must struggle on for several years until it has been demonstrated to the world in general that those immediately in charge of training school work are best qualified to arrange the hours and the course of instruction, both practical and theoretical, for the young women who wish to enter the nursing profession.

The training schools of California almost unanimously asked the recent Legislature to allow them to adopt the eight-hour system, that is, fifty-six hours a week, and to also allow nurses to devote four months of the senior year to special nursing in the hospital. Their request came before the Senate committee and was opposed, not by nurses, but by women who had never spent a day in a training school, and the result was that the request for a modification of the law was denied. Years ago when the sainted Florence Nightingale first inaugurated systematic training for nurses, hours on duty were not controlled except by the demand of the situation and a nurse might be on duty all the time, but as the profession developed laws were enacted by those superintending the training of nurses, and the hours of service were being gradually taken care of by the official nurses and the nursing organizations themselves. The eight-hour system was being gradually introduced and it would have been a matter of but a short time before every training school in good standing would have adopted this system. The nurses of the future who must receive their training under the new law are still an unknown quantity. The young women who apply this year do not begin to measure up to the standard of two years ago, either in ability, earnestness, health or education.

We have the indolent young woman who thinks six hours a day or seven hours a day to acquire a profession might be managed without much inconvenience to herself, for she has the guarantee of the law that she cannot be required to work longer, no matter how poorly her work is done.

We have the woman who is not in rugged health, but who can work the few hours required, with all the remainder of the day for rest.

We have also the woman who uses the training school as a stopping place where in exchange for a few hours on duty she can procure room, board and car fare while she is looking around for something more to her taste.

Last, but not least, we have the so-called nurse who is looking for a man and hopes that her blandishments in the sick room may bring about matrimonial felicity. These types will creep into the training school to the great detriment of our earnest altruistic pupils and the superintendent is required to look sharp if she would safeguard her school.

Three years made up of days of six hours and seven hours each do not make a nurse. Professions are not acquired that way. She may eventually hold the diploma because she has served the number of hours which the law of the land has allowed, but she has not been permeated with the God-given spirit that enters the soul of a true nurse, nor has she had the training to which she was entitled, training which teaches her to forget self, forget hours, and to throw her whole heart and soul into her work. Nurses should be made of sterner stuff than those who must work by the clock. Already the physicians are beginning to call for the older graduates, fearing to trust their difficult cases to nurses whose training has necessarily been deficient, and the time is not far distant, unless there is some modification of this law, when California graduates will be weighed in the balance with those from other states and found wanting. Without self sacrifice, without trials and hardships now and then, the profession of nursing will lose its attraction to those who are enthusiastically in earnest. The standard of nursing being lowered, the personnel of the profession will be lowered.

Years and years ago the "Clan Cameron" adopted as their slogan, "Shoulders together, Shoulders together, Shoulders together." In the same spirit those nurses and teachers of nursing who believe in our guild as a noble profession of self-sacrifice and altruism, one that should rank side by side with the three professions of history, must demand that the regulation of the performance of our duties in our schools and out of our schools shall be left to the combined judgment of our County, State, and National organizations.

To reach and maintain this independence of opportunity we must face the future like the brave clan of old Scotland with "Shoulders together, Shoulders together, Shoulders together."

DISCUSSION.

MRS. MITCHELL: I take this opportunity to say to you that I think all superintendents of training schools are thoroughly enthusiastic over the eight-hour schedule, but the majority of them are rather burdened with the forty-eight hour law; and those of you who have not adopted this eight-hour schedule, if you are looking for any advice from those who have had experience, I will be glad to tell you to get your eight-hour schedule adopted before there is a forty-eight hour law.

PROGRESS IN NURSING.

By Miss Harriet Leck,
Principal, Grace Hospital Training School for Nurses,
Detroit, Mich.

It is a simple law of human development that a people get on sanely and soundly only about as fast as they grow in like-mindedness, in ability to **feel** and **think** and **act** together.

From age to age progress has been made only as the world has renounced her independence and taken on bonds. Just so it must be with any real progress made in the profession of nursing. We must determine to renounce some of our pet schemes, perhaps, in order to work for the greater good of all concerned. In other words, we must bear and forbear with each other as individuals and as organizations if we would ultimately reach the greatest numbers with the most good.

At this particular period of the world's history the nations are looking upon the nursing profession with new interest, and it might be well for us to pause and think. For even as in the Crimean War, this may mean much in the advancement of our profession and we are reminded of the secret of the wonderful influence of our Founder, "the Lady of the Lamp." In trying to show the nurse "of how much use, unawares to herself, may be the simplest word of soothing, of comfort, or even of reproof," she says, "if she wishes to do this she must keep up a sort of divine calm and high sense of duty in her mind—this is the spirit of prayer which leads us in all our nursing silently to think of Him and refer it to Him." There was no secret about Florence Nightingale's religious spirit. I would ask, how much of that same spirit are we putting into the solution of our problems today? Each individual, committee or organization has its own opinion of the solution of some problem, all working separately perhaps and failing to see any good in the other's solution. Isn't it quite time for us to get together, to feel and act and think together, to feel our dependence on each other? As heads of hospitals and training schools we have yet many momentous problems. It is well for us to "make haste slowly," to ponder and weigh what the outcome may be, to take a broader outlook and await developments, to co-operate.

The classification of nurses and of training schools has been studied into and much valuable time and energy has been given to its solution by many of the brainiest men and women of our Associations. Its wise and just solution is tremendously important to special and struggling hospitals. The solution of this problem will come in the next few years, no doubt, when we are ready for it, so why worry about it? Why not await developments? The Conference to be held should mean much toward its solution. Within the next ten years it will work out its own salvation in a perfectly sane way and we will look back and wonder why we were so "stirred up" about it. Many difficulties will vanish when the "get to-gether" spirit prevails.

The primary aim of a hospital is the care of its patients. Is this fact ever lost sight of by the redtape of the administration? The ever increasing demands of service in the hospital have thrown a greater burden on the school. The schools have tried to meet the demands placed upon them by extending the course of training, by the reduction of duty hours, by placing the instruction in the hands of salaried instructors, etc. All of which has contributed to bring the schools to a standing equal to that of schools of medicine, law, pedagogy, music, etc. These schools are endowed and do not bring in any income. Why should schools for nurses?

It is upon the economy and efficiency of the training school for nurses that the reputation of your hospital depends, more than any other department. Dr. Hurd recently said that a well-conducted training school should be a source of expense, rather than a source of income. The authorities of training schools frequently take a one-sided view of their department and have too circumscribed an outlook.

On the other hand the superintendent of the hospital, in the multiplicity of his or her duties, frequently takes too narrow a view of the value of the broad training of the pupil nurse. He is, perhaps, inclined to blame the nursing department for something that could be remedied only by more instruction, more supervision or more nurses, and because he has not the time to look into some proposition, throws it aside. He says, perhaps, it is of no value, or that it is too expensive, when careful consideration and time spent on it might lead him to not only look with favor upon its adoption, but realize its value later to the reputation of the hospital, as well as in dollars and cents. There can be no progress made in this instance without the co-operation of both individuals, the careful consideration each of the other's opinion, the dependence on each other and the learning to act and think and feel alike on these vital things which mean so much to the progress of the school, as well as the hospital—the school dovetailing into all administration work and both co-operating for the good of the patient.

The lack of supervision of pupil nurses is a waste to any hospital or training school. The workmen of any large business concern have very careful supervision at all times. Is it any less important where life and death is at stake? In a discussion at the last convention of the American Nurses' Association the suggestion was made that there should be one graduate nurse to every eight pupil nurses. This ratio may be too high, but is it economy to place a pupil in charge of a ward of from twenty-five to thirty patients and expect the work to go on smoothly at all times, when nine out of ten nurses have not the necessary executive ability to manage that number of patients and the work entailed, to say nothing of watching the work of the other nurses?

The strict adherence to a preliminary term for probationers is economy. At first this was met with disapproval; now no training school of any standard is without it, because its value has been tested, tried and proven. Pupil-specializing is an economy because it adds to the training of the nurse and to the reputation of the hospital, which naturally follows.

The class schedule of studies taught by a paid instructor is an economy because it teaches the nurse the technical part along with the practical, thus resulting in intelligent care being given the patient. The nurse who is interested enough in her studies to be on the "honor roll," with very few exceptions, carries her knowledge and interest into the sick room and makes nursing a fine art.

But what are we preparing our nurses for? This might well be classified by what the three great organizations of nursing, with which we hold a joint meeting, represent—The American Nurses' Association, which is the Alumni of our schools; the Educational League of Nursing, which is the Institutional worker; and the National Public Health Nursing organization, including the school nurse, infant welfare nurse, tuberculosis nurse, social service nurse, etc. Now the alumni of our schools are three-fourths private duty nurses. This ratio may be a little high, since the public health nursing field has grown so rapidly, but the training applies to both. How are we preparing them for their field of work? The answer comes by looking at our graduate-special nurses in our hospitals. Are we satisfied with our own product? If we find it so hard to deal with these nurses in the hospital, how are they getting along in the home? How economical are they with supplies? How well do they adapt themselves to the patient, family, servants, etc.? Why do so many patients able to pay for a graduate nurse not want one? The trouble lies chiefly in the fact that the average graduate does not know how to make a home; she lacks the home spirit; she does not know enough of nursing ethics; she has not studied the law of human kindness, of unselfishness, of bearing and forbearing. How much of this spirit is generated in the training schools? In other words, how much real motherly, homey interest do we take in our nursing? Getting the work done thoroughly and the class work attended to is our chief concern. The spirit is first and if that is taken care of the rest follows without any trouble. We get the "cart before the horse." I fear that is what is the matter with our private duty nurses. Not long ago a prominent doctor said to me, "Deliver me from a nurse whose God is her salary, who can see dirt outside the sick room and not lift her hand to obliterate it, who would not stoop from her professional work to lift a crying child or relieve a tired mother." The majority of our pupils come from well-regulated, Christian homes. They are literally thrown into the cold, routine stream of hospital atmosphere. How can you expect them to swim safely ashore amid the temptations without careful watching of all sides of their make-up, the mental, moral and spiritual. Now, I do not mean that we should preach religion, but I do mean that we should generate an influence of justice, of right living and high thinking, of interest, sympathy, unselfishness, of love in its true sense. Is there any greater essential in the building up of home life? The school and hospital should be literally saturated with this home spirit.

If we make inquiries of our Central Directories for nurses we find that comparatively few nurses register for communicable diseases because they do not care for that line of nursing. Why? This training need not be neglected, because most schools are available to a hospital of that kind and can obtain that training by affiliation. The same is true of the nursing of nervous diseases. A certain amount of handicraft should be taught in every school to be taken advantage of in a long convalescent period, in the nursing of children for their amusement, and in diverting the mind of a highly nervous patient. These are not new suggestions, but I would call them to your attention because they are points in which much progress could be made in the care of the patient, which is our first consideration. Statistics show that the average stay of our patients in the hospital is 13½ days. Patients are rushed in and rushed out to make room for others. There is none of the good old-fashioned convalescent period for our nurses to get training in. As a result they do not like the long cases or the chronic cases, and when the short period of operation or acute illness is over with, the nurse no longer wants to remain but gets restless and very unhappy because she has not had the importance of careful nursing (of a different kind, perhaps, and yet fully as important) during the period of convalescence called to her attention, nor has she had any experience with such cases in her training.

One of the most marked signs of progress in nursing, as a whole, is the change of attitude toward nurses of different localities and schools. Ten years ago nurses graduating from a certain training school considered themselves much better perhaps than their neighboring school. State registration working toward a uniform curriculum has greatly aided in stamping out this narrow view and the local leagues of Nursing Education have brought the principals of nurses together to discuss the problems common to all and encourage a social aspect, thus aiding in friendliness. Isabel McIsaac did more, perhaps, than any other one person during her term as Interstate Secretary, to bring the nurses of the East and West together, making each broader minded.

This leads up to a consideration of the Institutional Nurse.

In a book on Nursing Ethics written in 1903, Isabel Hampton-Robb said that some one asked that she recommend a Head Nurse and after enumerating at length on the qualities she must possess to be successful, he concluded with the words, "In short, we require an intelligent saint." Not many days ago I received a letter asking me to recommend some one for surgical nurse in a small hospital and the doctor after stating the salary and outlining the work said, "I am particular about the type of young woman we get, as well as about her qualifications for work." Are we always as particular as we might be along this line, or do we frequently consider her qualifications for the work only? In my brief experience I have found that some drawbacks to institutional workers are—First, Unwillingness to take any more responsibility than is absolutely necessary, especially by a tendency shown to shirk responsibility in the training of nurses. Second, Lack of respect for authority, loyalty and honesty. Third, Tendency to too narrow a view or outlook. "Well, I get so tired of telling them over and over," we hear her say. That is what a supervisor is for. Mechanical routine work accomplishes small results. There must be a live interest with thorough demonstrations and with alert watchful supervision on the part of each and every member of a training school faculty, carrying the responsibility of the training of each nurse under her and giving them personal attention —studying to bring out the very best that is in her and thus receiving the best service from her.

Where the lack of respect for authority, loyalty and honesty exists, the school has a very weak link in its chain. It is possible to inspire these in some, but in others it might well be said that they do not know the meaning of the word. The success of the training school depends more upon how much leaway the superintendent has to choose her own faculty and her ability to pick congenial women who have been well-trained in the above qualifications, than upon any other one thing. Women, as you know, are blessed with intuition, and it does not take very long for the influence of one member to lower the tone of the whole school.

With regard to the last point—Nursing is too fine a profession for us to allow ourselves to only see our own little corner, and unless we seize every opportunity of association, we are neglecting a great opportunity, not only for our own advancement, but also for helping others. We surely cannot afford to ever grow narrow or selfish or to ever allow ourselves to think of our work as a trade and not the highest profession.

Last, but by no means least, we have the nurses represented in the Public Health Nursing Association. 'Tis needless to relate the great strides of advancement made by this association since its organization three years ago, not to remind you that ten years ago this line of work was hardly known. The summary of all the qualities of the private duty and the institutional nurse is necessary to the successful public health nurse, no matter what department of that work she is in.

In conclusion, I would urge unselfish devotion to the love of humanity and a realization that just in the proportion that we put self first, we lose in true progress.

"What does it matter who sang the song, if only the song was sung?
What does it matter who did the deed—be he old in years or young?
What does it matter who ran the race, so long as the race was run?
And why should the winner be proud of himself, because it was he who won?

The one who ran, and did not win, did he not do his best?
If he ran to the measure of his strength, what matters all the rest?
If the song was sweet, and helped a soul, what matters the singer's name?
The worth is in the song itself, and not in the world's acclaim.

O hearts bowed down with sense of loss because ye did not win,
If ye ran your best (I say **your** best), ye too have 'entered in';
The Song, the Race, the Deed are one, if each be done for **Love—**
Love of the Work (**and not love of self**), and the score is kept above."

DISCUSSION.

Dr. C. H. Shutt, of St. Louis: I did not care to be the first one to discuss these papers, which seemed to me to present some very valuable points for consideration by all of us. I feel, perhaps, in a peculiar position in discussing these papers, in being interested very actively in hospital management and also fairly active in professional work. I believe that I am in a peculiar position mentally to see some of the underlying features of the papers that have been presented. I believe that I can see some of the points in a different light than perhaps most of you can. I was very much pleased with all of the papers. They all presented some very explicit and very good ideas.

The second paper, concerning the condition of nursing in California in regard to the eight-hour law, was especially interesting to me, because we are having agitation of this character to a greater or less extent all the time in practically every city. There seems to be from some source or other an effort to reduce the profession of nursing to a trade, so to speak. As to why this should be done, I have not been able to decide in my own mind. I presume sooner or later they will reduce the profession of medicine, the profession of preaching and other professions, the profession of law, to the same proposition, if the lawyers, if the doctors and if the preachers will permit it themselves. Unless they come out and stand solidly together and say, "No, we refuse to accept this, we don't want it," I presume eventually they will have the same proposition, and the doctor in the midst of the appendicitis operation when his eight hours is up will pass it on to another to sew up. It is just as logical, absolutely, for a doctor to quit in the midst of an operation as for a nurse. It is just as logical for a doctor, although he is engaged on a certain case, to say, "I am sorry, but I have worked eight hours, you will have to get someone else now." I think we all in this room agree to a certain extent in these matters, as to whether it is logical or not from the standpoint of the patient, from the standpoint of ourselves, as individuals in training ourselves, in making us really worthy of following a profession.

I can only say this—there is so much to be said that I do not pretend or desire to cover the field—but unless there is some stand taken by those who are directly affected by persons who are on the surface in sympathy with the person who is working, according to their ideas, overtime, etc., and possibly to a certain extent by persons who have unionistic ideas. Unless we protect ourselves from these people, the people are going to protect themselves from us. We have to decide for ourselves. I have already seen, from the standpoint of an active surgeon, a tendency on the part of certain surgeons to train their own nurses, they are fearful of calling upon a nurses' directory. I have seen a number of times surgeons call on directories for certain nurses and refuse to accept any others because they knew that the nurse called for had had a training, not a teaching, she had had actual bedside training.

Now, I say, why should we have eight hours for any profession, why should we have fourteen hours or ten hours or any other limited number of hours, why should we not have that which is reasonable and just to the individual and no more and no less? A nurse in a good training school is supposed to spend three years of time; during that time she receives a certain small wage which is negligible in amount. A doctor spends besides his preliminary education from four to five years in a medical college with an average annual expenditure of from four to eight hundred dollars, not a cent coming in, all going out. After that, if he is going to be a physician capable of meeting situations which he will have to meet, he should also spend a year in a hospital. What is the tendency which all of you have noticed who have been connected with teaching hospitals? Bedside training! They do not want a large amphitheater now, with the professor coming in with his silk hat and sitting and lecturing to his students. No, he wants the opportunity and the privilege of taking his students to the bedside in groups of four, six or eight, not a large number, and then letting them feel the pulse, examine the rose spots, feel the abdomen, see the eyes, tongue, throat, everything leading up to the actual condition. Now, if a doctor must do that, how can a nurse become a nurse at long range? Why should she not be there at the bedside and get training as well as the doctor? If she is going to belong to a profession, she should; if she is going to be union, very well, the doctor will protect himself by training his own nurse, some one that he can recommend. As has been mentioned here already, the people who are able to employ nurses do not employ nurses; many people who should employ nurses do not, for the simple reason that when they have a graduate nurse come to the home she is not accepted; she has had a lot of teaching, no doubt, she perhaps can sit down and give the etiology and the causes and the symptoms and prognosis and treatment of typhoid fever, possibly better than her doctor, but when she comes to actually knowing the symptoms of a typhoid perforation from her own observation she cannot do it. As to knowing whether these patients are in a certain mental condition, she does not; she thinks the patient is, oh so funny and peculiar, she would rather have a nice patient. You have all those conditions to meet.

Now, there is no one more heartily in favor of a registration, of a dignified standardization of nurses than I am and many other men with whom I have talked. I think the idea of a three-years' training splendid, the idea of a state registration and of state examinations is ideal, if it can be carried on further, good, according to the demands of the times; but the idea of saying that a certain professional person shall work so many hours and no longer is wrong in both principle and practice. It is detrimental to the person, to the nurse, it is detrimental to the patient. The patient existed first; the patient is going to continue to exist, and if it is necessary for him to exist, in spite of these so-called unionistic nurses, he is going to have nurses that are not union, he is going to have nurses that are trained by the doctor who also will protect himself. I say that the thing for the nurses to do is to get together and refuse to accept such conditions; simply say, "My time is not up—eight hours, yes, that is what the law says, but I am going to work ten hours." If they cannot do it one way, they can do it another. The nurse can say, "You have had your eight hours of practical nursing, now you are coming under a teacher who is going to give you two hours of bedside teaching," and I would like to see the law keep you from those two hours. The law can say they cannot work, but there are many ways around a post. Something must be done and it must be done by the very people who are affected by the laws, in my estimation, or there will be something done by the people themselves.

The spirit of the last paper was certainly splendid, it is helpful, it is good for us all, it is exactly the spirit that must be instilled not only in nurses but in doctors as well. As I said, I think this idea of standardization on the basis of time and not of spirit is wrong; we must get the spirit, we must give nurses the work, we must give the actual practical training if we are going to succeed, if we are going to stay in the race.

Miss Jamme: I should like to say in regard to the statement that we are endeavoring to put the nursing profession in the rank of a trade, that the Legislature of California when this question was brought up for discussion during the long hours of one day and way into the night, had this matter brought before the legislators. It was said that they were endeavoring to put the nurses in a class with the canners. The answer was, "You are already in the class of the canners, you are working your nurses as the canners work their women for gain for your hospitals." It was on that basis only that the eight-hour law was passed in California.

Miss Pickhardt, of Pasadena: I want to say that the second paper is not really typical of the conditions, as I believe, of all hospitals in California. I want to state, too, that the hours of teaching, as one speaker has referred to, are not included in the hours on duty. Nurses can be taken to the bedside any time after the seven hours are up and taught; in fact, that is encouraged. We teach very much more than we ever have before, and the health of the nurses, I believe, has never been better than it is at the present time in most of the schools I have been able to see. I am not in sympathy with the eight-hour law, with the forty-eight hours a week, but I am greatly in sympathy with the better conditions that have come to light since this law has gone into effect.

Mrs. Mitchell, of Los Angeles: I would like, Mr. Chairman, to say a word. I want to say that while the forty-eight hour law came upon us as a thunderbolt—no one thought it would ever pass—and while we have struggled under it, it is working out for the better. I do not think it has the best influence always upon the pupil nurse. I think that it has been just as hard for the pupil nurse to adjust herself to the forty-eight hour law as it has for the people who are in charge of her. They have been at a loss to tell where they were. It has given a little more of an unfinished condition in their work which, no doubt, we will be able to overcome later—I hope so—but I feel that while the forty-eight hour law is very hard upon us, and it is an example for the rest of you to fight against and get your eight-hour schedule well under way, I do think that it has bettered things and that our training schools as a class are in better condition than they were when we started.

President: I understand that Miss Goodrich is present. I would like very much to hear from Miss Goodrich on this eight-hour question.

Miss Mary M. Goodrich, of New York: I am rather at a disadvantage because I only heard the last few lines of the paper on the eight-hour law. I feel very strongly in the matter. It seems to me, if I may put it briefly, that there was never a heavier indictment brought against our schools for nurses than that it was possible to include the pupil nurses in the eight-hour labor law. Had our schools been schools of nurses, this could not have happened. I cannot recall that in any case the pupils in any schools have been so worked that by any possible interpretation of the labor law they could come under it. So it seems to me that while we regret that they had to be included in the labor law, we cannot regret that a system which required the pupil nurse to give such hours to actual physical labor, to hard work, should be interfered with in some way, and we feel that while the eight-hour law, coming as it has, must have worked a great hardship and must have made a very difficult proposition out here in California, it devolves upon the hospitals and training schools all over the United States to try to readjust their school system and prevent their nurses being classed in that way.

Now, I cannot leave that last statement without just one other word: that I feel it is no humiliation to be placed under labor, inasmuch as I feel that every nurse—and I do not want this to sound sentimental, it is simply the way that I think we should look at it—so great a respect have I for the honest laborer that I feel the nurse who honestly gives of her service as a servant of the state is a laborer in the very highest sense of the word. I do not know that I believe in the trades' unions, but if "trades' unions" mean that such hours are arranged for the workers that they can broaden their minds and bring to their classes a fresher spirit, a greater enthusiasm, it is trades' unions that we want. If it means that we are simply commercially controlled, that we desire only to have the shortest possible hours of labor with the greatest possible returns, then I do not believe in trades' unions.

It does seem to me that if one considers what the man gives who is preparing for the medical profession, as compared with what the nurse gets, we must consider that while it is true that he pays for his professional education and that he gives four or five years, it is also true, as this very law in California has proved, that the nurse has been an actual economic asset to such an extent in the institution that it has been said that a number of hospitals in California would have to close; because, while the nurse may be receiving a small amount, sufficient to cover her uniform, and may be receiving her maintenance, is it not true that she is in actual service, giving more than she receives, otherwise it would not place these hospitals in such jeopardy? I believe that the time may come when nurses may pay for their education, when perhaps it is proper and right that they should pay for the theory which is part of their education and of which the hospital should be relieved; we are all struggling for such schools of nurses, but we also realize that it cannot come without an endowment. Medical schools are endowed; I do not think I have heard of a successful one without an endowment. Whether the state will see its way clear to do this, we do not know; I think it should, justly, feeling that the nurse is very definitely a servant of the state, a person whose services are very much required in building up the health of the state, which is its greatest asset. If the state realizes and appreciates what the value of the well trained nurse is to it, it will, then, I think, assume some of the responsibility of the training of these women and see to it that a sound theoretical preparation, as well as the practical preparation, which has been our greatest asset, be furnished. We all realize that without our bedside instruction, a nurse would be but a poor and failing person, but we also realize that she must have the theory to make that possible intelligently. It is simply in keeping with the entire vocational problem of the day. Every one will agree that a person to be a success in any vocation must have a very highly intensified preparation in the particular subject in which he is going to work, and must also have a broad, general knowledge to make that training of the greatest value to the community.

REPORT OF THE COMMITTEE TO CONSIDER THE GRADING AND CLASSIFICATION OF NURSES.

By Miss Charlotte A. Aikens, Chairman,
Editor The Trained Nurse and Hospital Review,
Detroit, Mich.

I am sure that after the very interesting papers you have heard, you will be glad that I have no paper to present and that my report will be very short indeed. The Committee on this subject has not met this year. Those of you who were at the St. Paul meeting last year will remember that the Committee was instructed to arrange for a Conference with the National League for the Education of Nurses—I believe that is the right term—and also with representatives of the American Medical Association. I think at the time these instructions were given, each member of the Committee felt that this Conference would take place this year. But when Dr. Mann began to plan for this Conference, he became convinced that the Conference could not be held until the matter had been presented to the co-operating associations whom he wished to have in the Conference. About three weeks before his death, he wrote asking me to take the necessary steps to have the representatives from these associations appointed. I have worked diligently on this matter, endeavoring to carry out his wishes and the instructions of the meeting last year. The matter was presented to the President of the American Nurses' Association and she agreed to bring the matter before her Association. With the American Medical Association I have not been successful in getting anything very definite. It is a very large body with a rather complicated organization and when I began to take up the matter of just who should be approached in regard to this particular subject I received four different pieces of advice from four different people. I wrote to the Secretary. I also wrote to the President-elect of the Association. I have conducted a correspondence with the Secretary of the Council on Public Health and Education of the American Medical

Association, with nothing definite to report. I am not sure yet just which particular council of the American Medical Association this particular piece of work would come under. I hope to get something more definite before we leave San Francisco. We hope to hold the Conference this coming year.

The report of the Committee is in printed form, as you will see. There is nothing to add to it and I think nothing to take from it until this Conference shall take place.

I would also like to say for the Committee which I represent that it looks forward to this Conference with a great deal of interest and with an open mind. We want to give the members of the medical profession the kind of nurses they want. We want to build up the standards of nursing in so far as we may and we believe that in calling this Conference we may perhaps come to have a little clearer light on some of the questions that we have to face at the present time.

This report, which I hope you will take home with you and study, represents a great deal of study and a great deal of work on the part of this Committee and of previous Committees of this Association. As far back as 1908, this Association has been at work trying to standardize or systematize in some way the training which should be given in all training schools.

I think that we often forget that this Association must represent not alone the large, general hospital, but must also represent the special hospital; and it includes in its membership the struggling hospitals which may be out on the outposts, as well as the large hospitals in the medical centers. And any Committee which undertakes this question must have a broad view of the whole field, not only in the United States, but in Canada. We have endeavored, I think, to do two things. I think we have had one clear-cut objective point before us in all our work, and there is one thing that we would like particularly to see as the result of this work. That is that in all classes of institutions, whether they are large or small, the nursing should be under the direction of duly qualified nurses. We even look further than that. We hope to some time see the nursing in the field outside, which is now in such a chaotic condition, done under the direction of the graduate nurse. We hope for those two things, we are working for them, that is our clear-cut objective point. Then we are trying to raise the standards of the care of the sick in all classes of institutions from the bottom up, as well as out in the field. This Association represents a tremendous money expenditure, it has been entrusted with tremendous responsibilities, and the public has a right to look to it to provide all classes of nurses, at least to try to provide. And we very much hope that as an outcome of this Conference which is to be held we shall gain a clearer idea of just the kind of nurses the physician wants. Dr. Shutt, I think, has mildly suggested that we are not turning out the kind of nurses the physician wants, but I am sure it is our wish to do so. So it is our object to improve the care of the sick in all classes of institutions, whether they are small or great, whether special or general, and that is the object we have in view in asking for this Conference. We expect to continue our efforts towards this Conference and hope to present a fuller report next year.

(The report referred to was printed in full in last year's Transactions. Reprints in pamphlet form were distributed.)

DISCUSSION.

PRESIDENT: What is the wish of the organization concerning this report? It is a very extensive report, it is a very long report, it is a very important report. Should we recommend at this time that it be accepted and read, or should we take time to read it and consider it and bring it up on the last day of the Convention? It is my impression that it is such an important recommendation that it would be very inadvisable to pass it at this time. In making that statement, I do not wish to criticize in any way the action of this Committee. I have not read this report, but I feel that the subject is so important that to pass it as a matter of routine and put it in our records as such would be a mistake. However, I will leave that to the Association.

MISS AIKENS: If I may speak again, Mr. Chairman, I would say that on page 24 of this report, on which the Committee sums up its recommendations, you will find that it presents this report for study only and it very definitely asked that no final action be taken until after this Conference is held.

PRESIDENT: Then there is nothing further to do about that. I wish to present to the organization my recommendations concerning the report of the Committee on Constitution and By-laws. This report of the Committee on Constitution and By-laws at this meeting would be of very little interest to many of you who have come here this afternoon to hear purely nursing topics and I recommend that this report be substituted and placed on the program for Thursday evening in place of the paper of Dr. Klein. Dr. Klein sent me a paper concerning a question of research medicine and I did not feel it was a subject which should properly be presented before this organization and returned it to him, as I felt he may have meant it for the meeting of the American Medical Association. Therefore, I would recommend that the report which is due this afternoon of the Committee of which Mr. Borden is Chairman, be postponed until Thursday afternoon.

Mr. Borden: I would like to say in connection with that that it would have to lay over twenty-four hours for consideration, which would bring it on Friday, the last day of the Convention, and we hope to have some action taken on it. Of course, it will be discussed. I have some amendments that I have been asked to present in connection with it. It is in connection with some of the work that we want to get started. The great trouble with these Conventions is that they lag along from year to year, carrying work that is presented over. I would like to ask that this Convention do something with some questions which have been brought up before it some time ago. So could that not be done before Thursday, in order that action may take place earlier than the last day, when a great many members probably will be out of town?

President: I think it can be taken up tomorrow.

Dr. F. H. Holt: I would like to make a motion that this matter be taken up tomorrow.

Motion seconded and approved.

Meeting adjourned at 4:15 p. m.

WEDNESDAY, JUNE 23—MORNING SESSION.

Dr. John A. Hornsby: Dr. Summersgill has asked me to start the meeting, as there are some routine matters to take up, and he will be here shortly. He has asked that there be taken up the first thing the question of Constitutional amendments offered at the last meeting. Will Miss Coleman read the report of Mr. Borden, as he is not here? Miss Coleman, I am wondering if we had not better have read just the changes as proposed by the Committee.

Miss Charlotte A. Aikens: Mr. Chairman, I would like to ask if the proposed changes are the report of the Committee on Constitution and By-laws?

Dr. Hornsby: It is the report of the Committee of last year which is up now for action. Those proposed changes were submitted by the Committee on Constitution of last year and they come up this year for action by the Association.

Miss Aikens: I understood that was what Miss Coleman was reading—that is, the report of the Committee of last year on the proposed changes in the Constitution.

Dr. Hornsby: No, she is reading the Constitution with the changes in it.

Miss Coleman: No, these are changes proposed since the Constitution was drawn up. This was placed in my hands as the report of the Committee of last year. I was not present at any of the Committee meetings. This is the Constitution as it now stands.

Miss Aikens: I beg your pardon. That was clipped from the volume of the proceedings of last year and that is the revision, as I understand it; at least, that was what was to be presented this morning, the revision which was printed in the volume of proceedings of last year. I think if you will compare in the volume of proceedings that with the old Constitution, you will find that there are a great many changes in it.

Dr. Hornsby: What is the pleasure of the Convention to hear, what Miss Coleman has been reading, which is the revision of the Constitution proposed? It seems to me this will not get us anywhere. We cannot carry in our minds the old Constitution and it will not mean very much to us, do you think, or should we read the changes proposed which go in to form the Constitution? I am more than glad to have the Convention have anything that it wants read, if I can have an indication.

Mr. George W. Wilson, New York: I move you that the Convention hear only those portions of the Constitution that represent changes in it, that Miss Coleman read only the proposed changes in the Constitution.

Motion seconded and approved.

Miss Coleman read the following:

SUGGESTIONS FOR AMENDMENTS OF THE DRAFT OF THE CONSTITUTION AND BY-LAWS PRESENTED TO THE ANNUAL CONFERENCE IN 1914.

CONSTITUTION.

ARTICLE III.

Section 1. Add "The active and associate members may become life members in their respective classes upon the payment of ——— dollars for active and ——— dollars for associate members," so that Article III, Section 1, shall read as follows:

The membership of this Association shall be active, associate, and honorary. The active and associate members may become life members in their respective classes upon the payment of ——— dollars for active and ——— dollars for associate membership.

ARTICLE IV.

Section 1. Amend by eliminating the reference to an Executive Committee, so that Article IV, Section 1, shall read as follows:

The officers of the Association shall be a President, three Vice-Presidents, a Secretary, a Treasurer, and a Board of Trustees as hereinafter provided.

The Secretary shall serve as Secretary of the Board of Trustees.

Section 2. Strike out the words "Executive Committee" and substitute therefor the words "Board of Trustees."

ARTICLE VI.

Substitute "Board of Trustees" for "Executive Committee."

ARTICLE VII.

Cross out from the title the words "and charges"; and also the last paragraph of the Article, so that it shall read as follows:

ANNUAL DUES.

In order to provide funds for the maintenance of the Association, members shall pay annual dues as may be determined by the By-laws.

ARTICLE VIII.

Substitute the words "Board of Trustees" for "Executive Committee."

BY-LAWS.

ARTICLE I.

Section 1. Cross out the words "Executive Committee" in the first paragraph and substitute therefor "Committee on Local Arrangements." Also cross out the last paragraph of said section, so that said section shall read as follows:

There shall be an annual meeting or convention of the Association, held at a time and place fixed by vote of the Association, or, if not so determined, by the Committee on Local Arrangements. The Committee on Local Arrangements shall, in conjunction with the Secretary, arrange programs for the Convention.

Section 4. Insert after the word "Section" the words "as hereinafter provided," so that said section shall read as follows:

Meetings of Sections shall be held in accordance with the rules established by the enrolled members of the Section, as hereinafter provided; provided, however, that such meetings shall not interfere with any general session of the Association.

ARTICLE III.

Section 5. Cross out the second paragraph and substitute therefor " He shall give to said Board such bond as it shall determine for the faithful performance of his trust," so that said section shall read as follows:

The Treasurer shall receive all dues and other moneys of the Association, and shall deposit and account for the same, under the direction and control of the Board of Trustees. He shall give to said Board such bond as it shall determine for the faithful performance of his trust. Such bond shall be in the custody of the President. All disbursements and expenditures shall be made under the direction of the Board of Trustees and subject to its rules and requirements. The Treasurer shall keep proper books of account and shall present a report of the finances of the Association at the annual Convention.

ARTICLE IV.

Section 1. Cross out the reference to members of the Executive Committee and substitute therefor "a Committee on Local Arrangements, to consist of the President ex-officio and four additional members"; and also the words beginning with "the chairman" at the end of the section, so that said section shall read as follows:

The President shall, immediately after his election, appoint a Committee on Local Arrangements,—to consist of the President ex-officio and four additional members,—and the following standing committee of three (3) members each, namely: A Committee on Nomination of Officers; a Membership Committee; a Committee on Constitution and Rules; a Committee on Development of the Association; a Legislation Committee and a Publication Committee, composed only of active members. He shall also appoint a Committee on Hospital Progress, of six (6) members, and a Non-Commercial Exhibition Committee, of five (5) members.

ARTICLE VI.

Section 1. Cross out the words "President" and "Chairman of the Executive Committee," so that said section shall read as follows:

The Secretary shall furnish the minutes and proceedings of the regular meetings for publication, as soon thereafter as practicable.

Section 2. Cross out the words "active and honorary" and insert the words "not delinquent more than one year in the payment of dues," so that said section shall read as follows:

The Secretary shall furnish to each member not delinquent more than one year in the payment of dues a copy of this publication.

Section 4. Cross out the words "the consent of the author and with."

ARTICLE VIII.

Substitute the word "Trustees" for "Executive Committee."

ARTICLE IX.

Insert the words "of five" after the words "investigating committee."

DISCUSSION.

Acting-President Summersgill took the Chair.

DR. SUMMERSGILL: Is there any discussion on the question of the change in the Constitution and By-laws? What is the feeling of the members regarding the adoption of this report?

MISS AIKENS: Mr. President, some of us are studying the report of the Committee on Constitution and By-laws which was presented last year very carefully and we are rather confused because that report was not read. It seems to me that this is too important a matter for us to take any action on until we are very sure that we understand what we are doing. We studied the report very carefully. It was printed for the express purpose of revising the Constitution and I think that we should hear the revised Constitution read.

PRESIDENT: I do not understand just your meaning, Miss Aikens.

MISS AIKENS: The Committee that was appointed to report last year made a very careful study of the whole situation and presented it to the Association for study for one year. Some of us were studying very carefully the report during the year and we are somewhat confused because we have not heard the full Constitution read. It is very hard for us to follow these changes and without a printed statement before us, as to just what the changes are; and it seems to me it would be very unwise to take action at this time in this matter.

PRESIDENT: It seems to me that the example we have had of the difficulty of handling our meetings, particularly out here, demands some changes, constructive changes, in our Constitution and By-laws. We have, I feel, handled the affairs of the Association, as demonstrated by what has happened in the arrangement of this meeting, in a manner that is not satisfactory or in accordance with the best interests of the Association. I am firmly of the opinion that we should have some Board of Trustees apart from the Executive Committee. I feel that the present Executive Committee should be a standing committee and that it should not be simply a committee on arrangements at the place where the meeting is held. It is a very unfortunate state of affairs to happen at this meeting and I feel with most men that it is a very serious matter to take up and change. I feel that I would like to recommend that a committee with power to act, a fairly large committee, be appointed to take up the question of our Constitution. I simply offer that as a suggestion.

DR. HORNSBY: That was what was done last year, Mr. President. I think your misapprehension comes from what happened while you were out. Miss Coleman started to read the revised Constitution as it is proposed to be after these changes are made. Most of the people here have not heard the changes that were proposed and I brought up the question, as presiding officer, whether the Convention would prefer to hear the revised Constitution, or whether they would prefer to hear the changes alone. The Convention decided that it would prefer to hear the changes and those changes were read. Miss Aikens says this, that many have made a careful study of the revised Constitution printed; but on the other hand those that have not followed the changes during the past year would not from this reading of the completed Constitution be advised as to what were the changes proposed to be made, so that a very small number, Miss Aikens included, would understand just what the changes were if the whole Constitution had been read, the rest of the Convention would not have followed the proposed changes, would not at all have understood just what changes were proposed. The changes have been read, but the Constitution as proposed to be revised has not been read. That is the point, is it not?

Miss Aikens: Yes.

President: I feel that in fairness the entire matter should be presented to the Convention in order that they can get a view of the Constitution as a whole. I wish to get the sense of the meeting. Miss Coleman is on this Committee. I would like to get her ideas of this change of our Constitution and By-laws.

Miss Coleman: I unfortunately did not have a meeting with my Committee, because I was not present last year. This report was sent to me as the report of the Committee. Would it make it clearer if each of the articles of these proposed changes were read, if just that article were read, instead of reading the whole? Of course, every one has had the opportunity of reading this revised report, because it came up in the Annual Report, and if each of the original articles were read and then the proposed change, would it make that clear to the Association? It would not interfere with the regular work and perhaps would make for amity, if the article to be changed were first read from the original Constitution and then the proposed change.

President: I would like to hear from others on this question of the changes in the Constitution.

Dr. John M. Peters, of Providence: I might say that if the changes were mimeographed and presented at the Association tomorrow, so that everybody might have an opportunity to see them, it would be of help to us. If that is not practicable, I think Miss Coleman's suggestion eminently fair and satisfactory.

Mr. J. B. Franklin, Dallas: We have lost enough time already to have read the Constitution as proposed. I move that we have the entire Constitution read.

Dr. David A. Smith, Salt Lake City: As the purpose of making these changes is to enable the officers of this Association to better care for it during the time of Convention and at other times, it seems to me that it is useless to take the time of all this body to consider this subject. I therefore move that a special committee be appointed to look into this and given power to act.

Dr. F. H. Holt, Chicago: I rather feel that Dr. Peters has suggested the right thing. I think that these Sections as altered should be presented to the Convention so that they may know what changes are being made, and I think it is a very good suggestion to have the changes mimeographed and in some way put before us. Most of us have seen them. I would make a motion that that be done. Seconded.

Dr. Holt: It could be done this morning while we are in session and presented this evening.

Miss Aikens: I would like to say that there is no more important business that this Convention has, in my opinion and that of a good many others, than this matter of the Constitution. A good many of the people who have tried to work for the Association in the past year found themselves very decidedly handicapped by the old Constitution, and the new Constitution is designed to give opportunity for better service to the Association. It means a great deal and I think that we should take time, and I very heartily endorse Dr. Peter's suggestion that the revised Constitution be mimeographed so that we have an opportunity of passing on it.

Question called for.

President: When would you have this brought up, Dr. Peters?

Dr. Peters: I should think tomorrow's session would give time enough. I would suggest that the Chair settle that.

President: It may be presented either at tonight's meeting or at tomorrow's meeting.

Dr. F. H. Holt: I would state that it seems to me the time to be set should be so that the matter may be presented when the whole Convention may take it up.

President: We will make it tomorrow morning's session.

Question put. Carried.

President: The question of certain amendments has been submitted to me. I would like to ask Dr. Peters if this interpretation of the present Constitution and By-laws would prevent us from acting on these amendments to the Constitution which were presented only yesterday to me. Is it necessary for these amendments to lay over a year, in the way that the other changes in our Constitution and By-laws have?

Dr. Peters: I really do not know enough about it, Mr. President.

President: Dr. Holt, according to the Constitution as written, these amendments as presented at this meeting will have to remain over for one year. You wished them presented at this meeting, did you not?

Dr. Holt: Yes, I understood these had been under discussion for a year and these were just amendments to what we were to act on; therefore, that they were in order.

President: Not according to the Constitution. There is no question but what any amendment presented at this meeting cannot be passed on at this time. Our Constitution is very clear and definite on this point.

Dr. Hornsby: Mr. President, may I bring up one or two things? I felt that would be the ruling on changes of the Constitution, but there are two or three little things that I would like to bring up at this particular time, in the shape of resolutions, and if it is decided that the Convention would like more time to think about them it may do so. The are as follows:

1. *That the President be and hereby is requested to appoint a local committee on arrangements for the meeting of the annual Convention, and, Further Resolved: That the next President be requested to appoint a committee on transportation arrangements for the next Convention and that the duties of such committee shall include arrangements for any special trains, excursions, etc.; and that the work of said committee shall be under the direction of the President and Executive Committee.*

We have had a good deal of trouble during the last two or three years, this year included, getting our Convention arrangements made, and it seems to me that a responsible committee should be charged with that duty.

2. *Resolved: That the next President and Executive Committee shall have the power of this Convention delegated to them to change the time and place of the next annual meeting if at any time during the year it shall appear to them that arrangements in the city chosen by this Convention as the next meeting place are not satisfactory or that the time chosen is not propitious for the meeting.*

We might have had our Convention chosen at a town where, like San Francisco many years ago, some event might occur which would absolutely prevent its being held; it might come at a time when the meeting would be out of the question because of the many attractions there. It seems to me that the Executive Committee should have some time to decide during the year on some things that might come up. It might become known to us that the city chosen could not or did not wish to take care of the Association. I think that power ought to be left in the hands of the Association to provide against any untoward accidents.

3. *Resolved: That it is the desire of this Convention that there be created for the next annual Convention an adequate and comprehensive commercial exhibit; that the next President is hereby requested to appoint a proper Committee to get up such exhibit; and that a sum, not to exceed $500.00, be and is hereby appropriated for the use of such Committee, to be expended under the direction of the President and the Executive Committee.*

That resolution has a long point ahead of it. We ought to have a lot of money, we ought to have a permanent Secretary, and in order to do that we must have money. I propose that we shall begin by creating a commercial exhibit that shall be most instructive and a most attractive feature of the Convention and that out of that commercial exhibit we shall make enough money to do some of the things that this Association ought to have been doing a long time ago.

4. *Resolved: That the next President and Executive Committee be informed that it is the sense of this Convention that the American Hospital Association should have a paid, permanent Secretary; and that the next President and Executive Committee seek ways and means to provide for such Secretary.*

Now, these resolutions do not touch the Constitution at all and it seems to me that we can pass them if we want to without a lot of delay and that we can do some things during the year that will not take us further than we would care to go. I would not care to go into the Constitution with some of these things, but we can pass them as the sense of this meeting and then if there is tomorrow an Executive Board created by the adoption of the changes in the Constitution these things can go to that Board, but I would like the Convention to pass on some of these things that seem very, very material to our welfare.

President: Is there any discussion on the resolutions offered by Dr. Hornsby?

Dr. John M. Peters: I move their adoption.

Seconded.

Miss Aikens: Mr. President, I would like to ask if giving the President and Executive Committee power to switch the Convention around in time and place when they felt satisfactory arrangements were not being made is not taking a good deal of power out of the hands of the Convention? The Convention votes on this each year. I think every one of us would stand back of the President and Executive Committee if an earthquake occurred in the place where we were to meet, but there is always a great deal of rivalry about where the Convention shall go and it seems to me that it is putting a great deal of power in the hands of a half dozen men after the Convention has voted to go to a certain place. I am sure that we would all stand by the officers if an earthquake or flood had struck the city, but I do believe this Convention should go to the place chosen by the Convention if at all possible.

President: Perhaps a few words concerning the difficulty connected with the workings of the Executive Committee in the preparation of plans for this Convention here would be interesting. When we were notified that the Convention was to be held here, we had several meetings. Naturally, the first thing that came up was the question of a meeting place. In looking about, we went over the type of hotels where we usually hold these meetings and we found that the accommodations would cost from seven to ten dollars a day at the four main hotels. The American Medical Association ascertained that fact and they had a session of the Board of Trustees and voted on whether on account of the prices being asked here they would hold their Convention here or whether they would switch it to another city. I understand that they felt the arrangements had been so far advanced that they could not very well change. I feel that we should have some executive board with power to act on the conditions which may threaten the success of any one of our Conventions. I do not think that we ought to permit the success of any of our Conventions to be imperilled in any way, shape or manner by local conditions which may make it impossible to hold a successful Convention and in many ways I think that we require some authority in the hands—I do not ask for it for the President or the Executive Committee—of Trustees, that we should have some governing body connected with this Association in order to properly carry on the work. There is no question about that.

Dr. Hornsby: That is what I was thinking of, Mr. President. I do not mean that the Executive Committee would be authorized under very small provocation to go somewhere else, but I find it is pretty generally the case in cities that as soon as they get a Convention they rather lay down on the job. The American Medical Association has held that power of change over the cities to which it goes and their Board of Trustees has always power to make those changes. I do not think it has ever been done, I doubt whether it would ever be done in this Association, but I do think we ought to have some alternative, some "come-back" in case the city to which we proposed to go might assume "We don't have to worry, we have got it, we don't have to spend a cent, how much is that Convention good for, we won't do anything." You know, without calling any names, where we have been where nothing was done for us, and I do not think we ought to stand for it. I think that something ought to be done, that we ought to have some authority to tell the city so and demand that such arrangements be made as will comport with the necessities of this Convention, to say nothing of its dignity.

Mr. Edward F. Stevens, of Boston: Would it not help us out if we took up these resolutions independently and then if there was something we did not care for we need not accept it. I think most of us approve of these resolutions, but I offer that as an amendment.

Dr. Peters: I will consent to amend my motion to the effect that each separate resolution be read and voted on in succession.

President: You have all heard the suggestion for the change.

Question put. Motion approved.

President: We will take up these resolutions in order.

Resolution One read by Dr. Hornsby.

President: What is your wish concerning this resolution?

Dr. Peters: Mr. President, it has been moved that they all be adopted and it is a question of having each separate one voted on.

President: Yes, but if there is any discussion first it must be on each one separately. Dr. Peters has made a motion that we adopt this resolution.

Motion seconded. Approved.

Resolution Two read by Dr. Hornsby.

Dr. C. H. Shutt, St. Louis: I move its adoption.

Seconded. Approved.

Resolution Three read by Dr. Hornsby.

Dr. Hornsby: I want to say about that $500.00 that I do not think it will have to be spent, because the exhibit will pay much more than the little money that will have to be expended in advance of the Convention, but some money should be available for the use of the Committee.

Dr. W. H. Walsh, Philadelphia: I move its adoption.

Seconded. Approved.

Resolution Four read by Dr. Hornsby.

Dr. Smith, Salt Lake City: I move its adoption.

Seconded. Carried.

President: I have a few announcements to make. The train will be here in front of the hotel at 12:40. There will be accommodations for about eighty. The wharf from which we leave for Berkeley this afternoon is in ten minutes' walk from here and I will ask Mr. Walkenburg to indicate the best way of getting there. It is about an hour from here to Berkeley and you will find many points of interest there. I desire to announce the appointment of the Committee on the resolutions in connection with the death of Dr. Mann: Dr. John M. Peters, Chairman, Dr. Louis H. Burlingham, and Dr. Frederic A. Washburn.

President: The first paper of the Session will be that of Dr. John W. Draper, Laboratory of Physiological Surgery, New York. It is on "Medicine and the World War."

Dr. Draper: I greatly appreciate the privilege of reading this paper before you. I am not a member of this Association and that, therefore, makes the privilege much greater. In an introduction to the paper, I would say that the University of the City of New York has just given the privilege to the Department of Surgery to grant the degrees of Doctor of Philosophy and Master of Science and it seemed to my senior assistant, Dr. Stewart, and to me an opportunity to present before some hospital association the great advantages that would accrue to the hospitals from this new move. It undoubtedly is the beginning of similar honors to be granted by other universities. Already the degree of Doctor of Science has been offered by the University of Minnesota. These are the first to grant the advanced degrees. It means that you will have in the hospitals a much higher grade of students to work in the wards, because a part of the advanced credit work will be done in the wards and we feel that it is a great opportunity for the hospitals.

MEDICINE AND THE WORLD WAR.

Surgery and the New Degree in Science and Philosophy —A New Era in Teaching and in Hospital Management.

By John William Draper and George David Stewart,
New York.

For many years, if not permanently, the devastation of Europe will place progressive medicine in the hands of America. This change would have come soon owing to the material and intellectual resources of our continent and to the cosmopolitan character of our citizens; but the great war has achieved in a day what would normally have taken years, and has thrust upon this country the duty of fostering the growth, uprooted and ruined in Europe, of that great science which, above all others, holds out hope to man and points the way to a future and truer civilization.

With the science of medicine constantly changing and enlarging, the task of teaching, always behind the science, becomes yearly more tremendous, and curricula are more and more overloaded. The writers, realizing the impossibility of giving consideration to the whole subject, wish to direct attention particularly to surgery and manifestly to only a few phases in the development and the teaching of this science, pointing out that if progress is to be made the growth of the two should go hand in hand. For, no matter how far we advance the science, if not taught to our successors, progress will be arrested. With our accustomed load of responsibilities and the added ones which have been thrust upon us by the world calamity each new step is fraught with additional responsibilities. That we are not alone in holding this pessimistic point of view is attested by such opinions as that of the historian Eduard Meyer (quoted by Russell, Atlantic Monthly, July 15, 1915), who considers Germany as the analogue of Rome and England as the analogue of Carthage, and looks forward to a succession of conflicts like the Punic wars.

The essayists wish to consider the following general topics: (1) hospital interne systems, and teaching as it now exists, particularly in the east, with some suggestions for betterment; (2) the modification and improvement both in scientific achievement and in teaching that may be expected from the form of corporation practice best illustrated by the larger clinics of the west; (3) the effects of admitting surgery into the select company of the graduate school and consequent recognition that it is on an equal footing with other philosophical subjects —a departure taken, we believe, for the first time by New York University.

Despite the fading distinction between medicine and surgery, the student, under the present system, makes his decision promptly after graduation whether to follow medicine or surgery. Ordinarily, after having selected surgery, he will have two years' service—frequently mixed—in which to do a little laboratory work, often a little ambulance work, keep bad histories, learn no pathology, and in his last six months to do a greater or lesser number of operations. The greater the number of these the worse, as a rule, for both his future and the public's welfare. We want to emphasize the conviction that we are letting loose on the public insufficiently trained surgeons, a matter in no sense the fault of the men themselves; and, also that we can and should offer the men greater opportunities. There are many others who hold the same view, as witness the following extract from a recent editorial in one of the daily papers, in which the author, while commending the organization of the American College of Surgeons, continues:

"Aside from the professional advantages we dwelt upon the prospective benefits to long-suffering public by the proposed guarding of the community against the numberless raw recruits who increase the army of surgeons and pseudo-surgeons, especially in the smaller cities and towns.

"The loss of life and mutilation of limb resulting from this surgical invasion are incalculable; and it is a harrowing reflection for those who are familiar with these conditions to recognize the utter ignorance of the public as to these daily fatalities, and its consequent indifference."

The development of many surgeons usually takes place in another way. After a few years spent in practice, the man who wishes to adopt surgery will do one of two things; he will either attempt to practice major surgery at once or he will take a special course in an effort to qualify himself. In the former case he is criminal, if not a criminal. In the latter, after many years of medical practice he takes a six-weeks' course covering every known specialty and then announces himself as a surgeon. Such courses are usually taken for the deliberate purpose of revenue, in which case they do greater harm than good.

Thus the country is infested with two types of men—the recent graduate, who imagines he knows the indications for and can perform any operation; and the amateur physician-surgeon, who, as Munroe said, "operates for the excitement of the fee."

What can be done to obviate this condition of affairs? Today's medicine differs from yesterday's. The hospitals need more internes; the public needs better trained men. Every man who would practice in the future should have, without exception, at least one year of hospital training. With the increasing complexity of the practice of medicine, the hospitals need the service of every man; and with the rapid increase in the number of hospitals there will be abundant opportunity for universal hospital training. Many others have written upon this same subject, and there is a great diversity of opinion; all agree, however, in recommending more or less hospital training as an essential for the development of a surgeon. The routine examination of a patient requires much more time and more assistants than formerly. For example, twenty years ago a patient was thoroughly investigated as to clinical laboratory methods by a simple examination of the urine and the sputum. Now we must add to this, blood, stools, and gastric contents, not to mention the Roentgen ray, the various complement fixation tests, and many others. In a large hospital recently an attempt was made to secure a Wassermann on every patient, and the cases soon ran into the thousands.

If the hospital needs more assistants, then it follows that, leaving the financial aspect out of the question, it can keep more men employed, and be of great value to the patients themselves and to the future of society.

It being granted that more men are needed, then more opportunities are available, and there is only one thing to stand in the way of universal hospital training, namely expense. The expense entailed in consulting a long line of specialists would be enormous even for the well-to-do; for the poor, it must be borne by the hospitals. So important is this to the public that many persons have suggested the community treatment, which will be referred to later.

The matter of research, too, while it may not interest the patient directly, is of vast importance and will have to be conducted by the hospital and the medical school, since it is essential to the development of surgeons and to the cultivation of their individuality.

A POSSIBLE SCHEDULE.

The time that it will take to make a surgeon, and the methods employed, are bound to vary, depending somewhat on conditions, somewhat on the man. The main thing is to set up and maintain a standard uniform enough to produce good workers without destroying individuality.

Bernays says, "After graduation the student must become attached to a hospital or he must become assistant to a hospital surgeon so that he may take part in the daily exercise of the science and art of surgery. Exactly how many years should thus be spent, I cannot say; one, two, or three years should suffice to turn out a surgeon who is capable and ready to offer his services to the public with a good prospect of making a useful and successful diagnostitian and operator, after the completion of further study."

Allen says, in discussing this subject: "First, thorough and broad instruction; second, prolonged hospital residence and post-graduate study; and third, the establishment of some standard of attainment which must be reached by men to gain their general recognition by the profession. If these ends be attained, the community and the general profession will not long remain in doubt as to the men who are deserving of their confidence and support. Such a standard would do much to protect the public from incompetent men, and to place in the hands of capable surgeons those facilities which they alone are able to utilize to the best development of their profession, and the best interests of humanity."

The plan of hospital reorganization that the essayists wish to suggest contemplates a short hospital training for all men (one year), longer training for the better men (promotion within the ranks), and, finally, remuneration after men have been in service for a certain length of time.

In order to give all graduates the advantages of the hospital it will be necessary, for some time at least, to shorten the time of hospital training to one year for the rank and file of men—which practically amounts to adding one year to the four years' course in medicine as now given, a step long favored by many educators. To make better trained men, however, it is proposed that the abler ones be given additional opportunities, so that at the year's end they may be offered advancement, the promotion being based on examination and knowledge of their capacity, character, and achievement, in part, at least, in creative work. This amounts to promotion within the ranks and should be based strictly on merit, determined by fitness. At present, when a student after graduation selects surgery, he will continue in surgery, no matter how unfitted he may turn out to be; and at the end of two years he will consider himself a surgeon and be willing for a consideration to offer his services to anybody. By this method of promotion within the ranks, if he has not the capacity to become a surgeon, he will be dropped at the end of his first year. The knowledge that a few of their number at the end of the first year will receive promotion, and that a still smaller number may be appointed to positions as residents at the end of the second year, will keep alive a constant striving and ambition, and bring out the best that is in each one. This has recently been offered by one of the writers for adoption as the basis for the intern system of Bellevue Hospital.

This compulsory hospital year, with a preliminary compulsory academic year following high school added to the usual four years' course, will amount to a six-year course in medicine, and it is believed by the essayists that this offers a better disposition of the time than to compel men to possess an academic degree preliminary to the study of medicine; at least, until much of the useless matter now taught in the academic as well as in the medical schools is abolished, making room for more profitable work.

To amplify, it is believed that under existing conditions, one year of special preparation following high school, and one year of hospital training following graduation, are of more value to many men than the four years spent in acquiring an academic degree. After all, the fact is that we are dealing with the average man who is going to practice among his average fellows, and there is such a thing as over-training in medicine, with consequent loss of initiative and efficiency.

It must have been observed by all educators that the ordinary human mind is capable of acquiring a certain amount of knowledge, and after this has been stored, the limits of capacity have been attained, and the owner, if pushed, becomes stale. This accounts for the phenomenon that often presents itself when a student, possessing an academic degree, is outdistanced by one who holds only a high school diploma, but is able to keep up steam all through his medical course. Heredity, no doubt, has as much to do with these phenomena as environment, but the one is immutable while the other is subject to modification. Take such a man of the rank and file, gone stale—take him from the task of acquiring, give him applied work; close his books, for the time at least, and under the stimulus of his environment and problems he will develop again along other useful lines. How helpful it would be if a feasible index or measure of a student's real limitations and capacities could be found! Such a scale is as necessary to medical education as it is to commerce and the mechanical arts, where it has long been sought. We shall hail with delight the medical efficiency engineer.

It will be argued that such a schedule would take a great deal of time, but it must be observed that it is capable of infinite variety and, depending on his fitness and ambitions, the young man may drop out at the end of any one-year period or at the close of the whole period. If he stays through and is fit, he ought to and likely will be promoted in the service of the hospital and university.

In the case of those whose service is long, it is believed that some form of payment should be arranged for each year after the first, and certainly after the second year of service. Indeed, it is to be expected that when the public, represented particularly by the lay hospital boards, awakens to the vast economic principles involved here (for every day the sociologic side of hospital work becomes clearer to all) they will be willing to pay even the interns. It is at this time that the average man, having spent all his family can afford, needs to earn at least money enough to support him, and it is believed that under some such plan he may receive fully as much as is collected on the average by the beginner in embryonic and essentially unproductive practice.

No doubt many other schedules will be suggested to fit special environments, but as we have already stated, the important thing is to make a beginning.

The development of the science under the continental system depended, as has been stated by a surgeon, upon amazing patience in pursuing long courses, upon accurate knowledge of anatomy, upon familiarity with gross pathology, willingness to serve long apprenticeships, and a devotion to a life with but small compensation. It might be and is urged in opposition to the continued success of these methods that there is a rather noteworthy and widespread lack of the application of the laws of physiology to continental surgery and that a long period spent as assistant is almost certain to repress initiative and to subordinate individuality.

Certain it is that the impression gained by an American surgeon visiting the continental surgical clinics, aside from the marked contrast in the handling of the individual patients, is the difference in technical skill. Good dissectors are common, but surgeons are not longer bred in the dead-house. Rare, indeed, is the American surgeon who would choose to be operated on on the continent in preference to America! The poorer technic and the persistence on the continent of the pathological era in surgery are the two important sign posts which pointed to the early transfer of surgical progress to America long before the war.

Even admitting its value, it may not be concluded that we can transplant these methods to American soil any more than make student duels popular. Before the transplant could grow the entire environment would have to be changed. For instance, there the youthful doctor receives respect and has opportunity, and his small salary is sufficient; here, without a practice, he finds little comfort in watching a broker or manufacturer who has a five-thousand-dollar limousine and a box at the opera, both of which may be denied to himself for his entire professional career. Nor is the time urged in any of these schedules long as compared to that of the practitioner of Parés time, who lived in the house of the master for two years in Paris and then followed the Spanish army in the low countries for four years longer to see whether the Italians or Germans or Spanish had any advantage over the modest Ambrose, who wrote: "I have certainly touched the mark whereat I aimed, so that antiquity may seem to have nothing left wherein it may exceed us besides the glory of invention, nor posterity anything left but a certain hope to add some things, as it is easy to add to former inventions."

Such is a review of the well known system of hospital training generally received by the young surgeon. In brief, he is taught a highly technical therapy out of all proportion to the training given in diagnosis. We do not mean to imply by this that the training of the young physician is one whit better, for it is at least equally lacking; but we are here particularly concerned, as already stated, with the student who is to become a surgeon. Because of the greater damage and of the greater good he can do, it is well to improve his standing first.

Turning now to the second point under consideration, it is a certain prediction that the best results in the future will be largely a matter of team work. Medicine is too complex for any one man to attain a complete understanding of any considerable part. In the old days, a student went into the house of the master, who became his preceptor. Ordinarily, their reciprocal relations were not of much advantage to either. The preceptor told stories and the student compounded Gregory mixtures. Today we believe that after graduation the student, now a doctor, should become closely allied with older and busier men. It is easy to see that the benefits are not by any means one-sided and that added ones should accrue to both or to all the members of this medical partnership. Indeed, the first thing that strikes one is the value of that free discussion and consultation which takes place without added expense to the patient.

Who would think today, as Ochsner well says, of attempting to operate a shoe factory by the methods of fifty years ago? That is what many hospitals and physicians are still trying to do; no wonder they are outstripped by institutions and men using modern equipments! Thus has come about the medical corporation—best developed in the west and for the time, at least, answering admirably the intricate requirements of present-day medicine.

If today calls for corporate medicine, communal medicine may be the method of tomorrow. Mention has been made on the one hand of the quasi-public nature of our profession, of the direct and vital interest in it which every layman has or ought to have; of the complexity of our problems, the impossibility of any one man being able to solve or even to grasp them all; and of the expense, on the other hand, of submitting them to a group of specialists; of the necessity on this account for team work; of treatment by companies of physicians or by hospital staffs. All of these tend to make treatment, at least preventive treatment, a matter of institutional care. This has been done here and elsewhere by boards of health, and in England under the insurance act; a large part of the medical profession have become public servants and are paid for their public work out of the public treasury.

Discussing the possibility of medicine becoming institutional in the future, particularly preventive medicine, the retiring medical officer of the New York State Board, in a recent interview, has pointed out the tendency in this direction, but has refrained from predictions.

In passing, he states that it is believed that under the Lloyd George Insurance Act much of the medical service rendered is perfunctory, and cites the further danger that doctors may lose initiative. As to the possibility that this will come about, one can at present only class the act with the referendum and recall, or rather, with government ownership of railways and telephones. So far as we know, these are still sub judice; to make them a success, the whole order of the world will have to undergo readjustment. The essayists are far from believing, however, that such readjustment may not come or, indeed, that it may not already be close at hand. In any event, they stand uncompromisingly for the preservation of individuality even at some loss of efficiency.

Turning from the hospital intern system and corporate medicine to the surgical training of the universities, it is timely to inquire as to what factor has been at work in causing the universities to admit their departments of surgery to their graduate schools. It is because the university has recognized in the laboratory of physiological, surgical research a factor of great educational value and the link between applied surgery and the natural sciences.

Laboratory methods in teaching surgery to undergraduates were first shown to be of permanent value about fifteen years ago. Surgery is indebted to W. S. Halsted for the stabilizing of this innovation, and the present position of the laboratory unit in departmental work is due primarily to the genius for teaching of this far-sighted man.

Halsted's ability for training men is second only to his capacity for surgical research, and he early discerned that the surgical laboratory in the hands of the head of a department of surgery would be an invaluable tool for evolving new surgical facts and creating a new race of surgeons whose viewpoint would be philosophical rather than technical.

Since then the rapidity of the growth of the surgical laboratory in our leading universities has been truly amazing, each prominent medical school being now more or less thoroughly equipped with the mechanical requirement for such a unit. The laboratory has become an integral permanent division of each surgical department, and as in all cases where growth has outstripped adaptation, the material equipment having outgrown the academic application, it may be well to pause to consider some of the pressing problems which have thus arisen. Prominent among these are, what should be taught, to whom it should be taught, and the time which should be devoted to the course. Fixed must be the growing conviction that the surgical laboratory staff, to accomplish the best results, must be given full hospital facilities, together with recognition and promotion for achievement at the same rate at which it is now given men who work only in the dispensary and the wards. This will come with further enlightenment. The necessary hospital readjustments which are inevitable as the graduate surgical student takes his place in the wards, are likewise subjects for thought and action. For the advent of such workers, whose advanced degrees will be won as much in the wards as in the laboratory, together with the application of a system such as proposed, will mark the passing of the merely technical intern. By the system of rotation proposed, the surgical residents will become medical academicians first and technicians afterwards. We can depend upon the laboratory to break the evil and antiquated conception of a distinction between medicine and surgery, and to give a new and pragmatic viewpoint.

The problem of coördinating the workers and of interlocking their results is by no means an easy one, but a correlation of the hospital ward, the dispensary and the surgical laboratory for undergraduate and graduate teaching and for hospital welfare alike is necessary. In the earlier day, not by any means remote, this was a simple matter, for the granting of clinical opportunity in the hospital and promotion of the teaching staff went along hand in hand almost automatically. One factor tending to simplify conditions of these earlier days was that surgery was very justly considered by the university authorities as a technical art, quite outside of the academic pale, nor could any one justly assert, however partial he might have been to that art, that the academicians were incorrect in their viewpoint. Now, however, the universities have begun to admit their departments of surgery into their graduate schools on the same basis as physiology and anatomy, granting the usual advanced degrees in science or philosophy for the study of surgical problems; and such degrees will be granted for the studies upon the human as well as upon the lower vertebrate body, the whole question being obviously one of comparative mammalian pathological physiology. Departmental heads, therefore, must promptly recognize that the old barrier between so-called "practical" and "theoretical" workers in surgery was a bad one. This position has just been taken by New York University. It must give place to the modern conception that laboratory training, with its logic, its inductive and deductive philosophy, far from unfitting men for the work of applied surgery, certainly equips them for the best and most progressive constructive work. The writers of this article wish to make it clear that they consider bedside work essential, but that no amount of it can ever take the place of laboratory training in the making of a surgeon, the one being complementary to the other. The teachers of the greatest post-graduate school in the world, the Mayo Clinic, hold that the operative technic is the last to be considered and the fundamentals of diagnosis the first, and with them we heartily agree. Diagnosis has its roots deep in bio-chemistry and physiology. The profession looks to the hospitals in no less degree than to the medical schools to support and give proper advancement in the wards to young men who elect to spend a large part of their post-graduate time in the study of these sciences. Otherwise, if preference is given to men who simply do ward work, men who seek hospital services will fear to give requisite attention to research.

The following quotations from Deaver (Deaver and Pfeiffer, L. I. Med. Jour. July, 1915) serve well to indicate the trend of modern surgical thought:

> "If a medical school can produce graduates who think correctly and advise wisely in surgical diseases it will have accomplished its proper task. The development of surgical sense, of a correct understanding of the role of surgery in prevention and cure, should be the aim of instruction; methods, procedures and handicraft are secondary considerations."
>
> "The best book on surgery is the latest work on physiology."
>
> "The mere craftsman is no longer entitled to be called a surgeon; he must be a biologist, bacteriologist, and pathologist. Any course in surgery which does not prominently recognize the changed relations between the head and hand of the surgeon is not modern and is not satisfactory."

It is our impression that the modern department of surgery must consist of three closely correlated divisions, to-wit:

1. Applied or therapeutic surgery.
2. Diagnostic or deductive surgery.
3. Experimental or inductive surgery.

These three are not named in order of relative importance, but in order of their evolution. It seems not improbable that when arranged in accordance with their true value this order will be reversed. Such a rearrangement would lead the student through induction, from simple experimentation to deduction or diagnosis, and finally, to the applied or therapeutic side of the knowledge. The deductive method is obviously fitted to the mature mind of wide experience; the inductive is essentially the method of the young mind, with little or no experience.

We agree with Jonas, who says that principles, rather than technic, should be taught in surgical laboratories; and this conclusion is based upon our fourteen years of experience in surgical laboratory teaching. We are convinced that much evil may result from routine teaching of operative technic, for one of the objections to today's training is that technic has been made too easy. Is not this the lament of every well trained surgeon who is obliged to spend a large part of his time in repairing the damage done by technicians who, unfortunately for the patient, were nothing more than mere craftsmen? Such lacerations are not longer to be confounded with operations based on physiology, however cleverly they may be executed, for they give bad results and discredit surgery. Undergraduate technic should be learned chiefly in the minor surgery, in bacteriology and upon the human cadaver. The surgical laboratory should be open to the senior students only and to those in whom the scientific mind is coupled with manual skill. Just what the postgraduate laboratory teaching should be is still, as intimated, a matter of doubt, but the following outline has proven serviceable. Its best use, perhaps, is to illustrate that more and more surgery is coming under the domain of law, and thus amply to justify its acceptance by the graduate schools of philosophy. As has been written:

> "All mundane events are the results of operation of law. Every movement in the skies or upon the earth proclaims to us that the universe is under government.
>
> "Physiology, in its progress, has passed through the same phases as physics. Living beings have been considered as beyond the power of external influences, and, conspicuously among them, man has been affirmed to be independent of the forces that rule the world in which he lives." Draper's Intellectual Development of Europe.

Modern surgery concedes man's dependence upon these forces and insists that no therapy can possibly avail unless based upon them.

A. Alimentary tract.

1. The dynamics of the alimentary canal. Dilatation, stricture, ulceration, tetany, atony, autonomic relations, heredity.

2. Internal secretions of the duodenum in relation to death from intestinal obstruction and auto-intoxications.

3. Law of organic compensation in special relation to surgical therapeusis, ablation and the post-operative readjustments of the organism, ileostomy and the vicarious assumption of colonic function. Colectomy, gastrectomy.

B. Urinary tract.

1. Dynamics of the ureter and bladder. Dilatation and law of compensation. Stricture, neuro-muscular impairment.

2. Paramount importance of the ureteral prostalsis over the uretero-vesical valve. Hydronephrosis and renal infection.

3. Surgical analogy between the alimentary and urinary neuro-muscular tubes and valves.

4. Uretero-enteric anastomosis based on surgical physiology.

C. Cerebro-spinal system.

1. Hyperthermia in connection with decompression.

2. Experimental studies in increased intradural pressure, concussion, contusion, etc. Experimental optic neuritis.

3. Experimental spina bifida. Relation of heredity.

The admission of surgery to academic university standing is a step of great importance, not alone in itself but in the opportunity which it creates for the hospitals to increase the number and quality of ward workers. The essayists feel that this departure may be the vantage ground of many new lines of thought and action.

The distinction between medicine and surgery has faded almost entirely away, and with it the old idea that the "practical" man, whatever that meant, was superior in applied work to the so-called "theoretical" man, who might decide to turn his attention in part to applied surgery. Laboratory studies must be put on equal footing with ward work in hospital recognition and advancement.

Hospital services should be mixed, but the mixture must be constant, not alternating. Medical and surgical wards should be much more closely identified and all petty strife between the services eliminated. It is also believed that the time will soon come when the so-called medical man will visit the surgical wards, and the surgeon be made welcome by his medical confrere at the bedside of patients who may in no sense require operation.

Indeed, if one considers the frequency with which the operating doctor visits and inspects the cavities of his patients, there to see the living pathology rather than terminal dead-house conditions, it could in no wise be considered unjust if one applied to the surgeon, rather than to the physician, the term of internist—iconoclastic, perhaps, but true.

All new hospital cases should be admitted to a diagnosis ward for impartial study. It is absurd that sectarianism should longer be tolerated in medicine, in view of the healthy pragmatism which is rapidly replacing the dogmatism of the past, and of the broad and generous viewpoint with which medicine and surgery have recently been endowed because of their acceptance of scientific truth.

Full recognition by the graduate schools and a free hand to correlate surgical studies upon lower mammals with coördinate studies upon the highest mammal, man, in the surgical laboratories and in the hospital wards, will tend further to fuse medicine and surgery, improve the grade of students, diffuse knowledge, and ultimately serve to lighten the burden of fostering medical progress which has suddenly come to America because of the great war.

PRESIDENT: Will Mr. Bartine kindly take the Chair? The next paper is that of Dr. Robert J. Wilson, Director, Health Department Hospitals, New York City.

LITTLE THINGS THAT ARE BIG THINGS IN HOSPITAL MANAGEMENT.

By Robert J. Wilson, M.D.
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If the big things of hospital management are to be measured by the standard of money then there is no justification for the title of this paper. I think, however, that most hospital superintendents will agree with me that the big things in hospital management are those that contribute the greatest amount to the direct good of the patient, and that, through contributory channels, indirectly add to his relief and comfort. In these days of efficiency and economy money standards are apt to be used too much in appraising the actual value of things. I would not for a moment decry the necessity of keeping at the lowest possible cost everything that has to do with a hospital, but I am convinced that a hospital which is costing three dollars per day for the care of a patient may be giving less to him than one that is costing one dollar per day.

Most physicians and most medical superintendents, like all other directors of enterprises are apt to argue from cause to effect, and in considering a proposition of any kind they premise that such and such a thing happened in one way, and such and such a thing happens in another way, the result will be a certain effect; that is if it were hospital management; if a certain amount of money could be obtained for the pay of employees and a certain amount for the purchase of the necessary medical and surgical supplies and equipment, a patient could be taken into the hospital and given adequate scientific treatment for that amount of money. For the consideration of this paper I propose to reverse the order of things and begin with a single patient and say that he demands for his treatment adequate medical and surgical attention, and that in the course of human events, if all goes well, he will be discharged from the hospital cured, and that some of the big, little things that contributed to his cure will not have cost the institution one cent of money, but these things having been properly weighed by the patient and visitors to the institution will add to its reputation, a weight of good report that could not be purchased for any money.

Now, what are some of the little things occurring in the wards which may add materially to the comfort of the patient and the reputation of the hospital? In the first place courtesy on the part of the employees; this costs nothing; it could be enforced in any hospital; next to it, and of far greater importance, which the hospital authorities could not force the employees to give, is sympathy. Courtesy can be purchased, sympathy cannot; sympathy grips the heart of the other fellow, courtesy does not. One may be courteous and cold and repellant, but sympathy is like the sunshine, it warms and makes happy and attracts, it dispels sadness, it softens the hard heart, it shares sorrows, it lightens burdens; it is the finest quality that any doctor or nurse or attendant, who is in contact with the sick, can have. The sympathetic nurse feels the pain herself, when she pulls the patient's hair while combing it. It's the gentle touch that makes the morning toilet so satisfying to the dependent sick, and these apparently trivial things might be multiplied indefinitely. We all know what they are; do we all see to it that these little details, which mean so much to the patient and so little in money to us, are carried out? The best hospital employees are not always the brightest and most highly educated. The mediocre nurse or doctor who can instill in their patients a confidence brought about by that indescribable chord of human sympathy is the greatest asset the hospital can have. Of course the highly educated one, who has not had educated out of him or herself, through the modern methods of efficiency and economy, that human sympathy which a great many start with, and few end with, would be the employee par excellence.

How can employees show this sympathy of which I speak? A patient is admitted to a hospital, coming into such environment for the first time in his or her life, surrounded by strange officers, strange ways of doing things, strange rules, of most of which they are ignorant, until they hear in a peremptory tone, do this, or don't do that, from the people immediately directing their case, and at this time they are in as forlorn a condition as it is possible for anyone to be. The nurse and doctor in a ward where such a patient is confined are perhaps over-worked, full of their own affairs for the day, and totally oblivious of the fact that there is a new, lonesome, sick, homesick patient in their ward. A smile from a nurse, a kindly inquiry in a kind tone of voice from the doctor, an expression by one or the other to the effect that a hospital is not a half bad place, expressed with the hope that their stay will be as pleasant as can be under the circumstances; a little interest shown as to the condition of the patient without becoming presumptive, or personal, or patronizing, will do a great deal towards their comfort and good feeling. If this kind of conduct on the part of the attendants is followed up each day, if the almost brutal indifference that is common to many wards is abolished, you will see a great change in hospital management. There are little things that make great impressions upon patients, and the average hospital employee, doctor and nurse, seem unable to appreciate them. Questions should be kindly answered, request for so small a thing as a drink of water should be immediately acceded to. The care to be used by doctor and nurse in protecting people against the horror of seeing the dying, protecting them against hearing callous remarks relative to the passing of the patient, the unseemly habit of pointing out patients in the ward and saying, this one or that one needs such and such a thing; giving directions to, or talking to nurses about their condition favorably or unfavorably without regard to their feelings, all are to be severely criticised.

When a patient enters the hospital he is divested of everything material that he has. How is this accomplished; are his clothes and valuables torn off of him by rude and ignorant attendants, or is he told why he is deprived of them in an intelligent way? Is he given a receipt for them? If there is valuable property, is the hospital and its employees protected by having two persons as witnesses present when he gives up his valuables? Does the hospital provide a proper place to store his clothing? Is it kept on proper hangers and is his underclothing laundered before he is discharged, or does the attendant bundle up all his effects, hat, shoes, clothing, in a jumbled mass and tie it up in a bundle to be given to him on his discharge in a dented, wrinkled, and generally unfit condition? Does any one take any interest in his clothes? They should! It costs little and means much both to the patient and the hospital.

In our hospitals we are about to adopt the system of sending a nurse with the doctor on each ambulance, who will carry with her an outfit of hospital clothing, and who will remove the patient's clothing and jewelry in the home so that on admission to the hospital the question of clothing and valuables will not have to be considered. How often patients are neglected in the matter of the body hygiene! The rules of all hospitals say that the patient shall be supplied with an individual towel, an individual soap dish, an individual tooth brush, and how frequently these things, together with a wash basin, are placed before patients who are utterly unable to help themselves!

The doctors' rounds in the hospitals should be attended to with a strict punctiliousness no matter how few the patients. Adherence to a rigid system maintains the proper morale in the service. The house staff should accompany the visiting physician, and no matter how much they may disagree with his opinions, or how little they may esteem his ability, they should be forced to show him the respect due his office. It is not the physician that they are serving, but the hospital and its patients and there should be no deviation from the strict line of duty, irrespective of the personal and medical qualifications of the visiting.

House physicians and internes should work under definite prescribed rules, and before entering the service these should be explained to them by the executive officer and they should be requested to ask any information that they might desire at the time of the first reading of the regulations. It should be impressed upon ambulance doctors and admitting physicians that their duties are of a twofold character. First, as medical officials they receive the patients and assign them to the proper wards; secondly, as administrative officers they come in contact with the relatives and friends of the patients, and from their attitude these people draw their conclusions as to the character of the institution and the kind of treatment that is being accorded to the patients. This is a very important item for the reputation of the hospital, and for the peace of mind of the relatives and friends.

As far as possible the medical business of the hospital aside from emergency cases and nursing duties should end at a regular hour, and before the patients have retired to bed. Doctors should not be allowed in the wards after eight o'clock in the evening unless sent for by a nurse for special cases.

When nurses are employed they should be informed fully of the regulations of the hospital before going to work. A good scheme is to have them read and sign the regulations, which should then be filed in the executive office. After this the nurses should be sent to the superintendent for a talk on hospital policy; such a talk should include their attitude towards patients, it should be explained to them that patients never voluntarily enter a hospital, while nurses solicit their positions; that they should show to the patients the same kind of treatment that they would like to have accorded to themselves or to relatives or friends if they needed hospital care. They should be told what the attitude of nurses should be toward visitors; that when visitors enter the hospital they should be received courteously and they should see to it that they have every opportunity that the condition of the patient will allow, to have a proper visit, the time of which should be limited, and they should explain the time limit courteously and firmly upon the patient's visitors entering the ward. In all questions of hospital administration and medical treatment nurses should refer the visitor to the proper officer. In matters of no special importance they should answer the patient or visitor, and give the information sought, in a way that would lead them to believe that this was their sole interest in life at the particular time. It is the duty of the nurse to have the visitor leave the hospital with a pleasant remembrance of the visit. They should neither ask nor give confidence to visitors, they should not show an undue interest in the private affairs of the patients or visitors, and under no conditions should they deport themselves in any other way than would be considered as good form in polite society.

Nurses should be told what their attitude should be toward the employees with whom they work. Cruelty to patients and insubordination to officers should be dealt with by immediate dismissal; there should be no compromise in these matters. They should be told that in the performance of their duties they should be helpful to one another, and new nurses should be given every possible information necessary to make them good employees for the hospital. In their conduct towards their subordinate workers they should be firm and tactful, at the same time kind, remembering that their differences in station are largely a question of advantages. Many a nurse has spoiled a good ward maid by failing to be firm and tactful or forgetting this admonition.

The supervising nurse or superintendent should keep an efficiency record of the nurses, and I think the most important item to be considered would be that of nursing instinct. Nurses are something like preachers; they may be turned out by theological schools as very effective theologians, or by training schools for nurses into highly educated and trained nurses, but only those that have been called are the ones that can give at the bedside of the very sick, the comfort and care which is so satisfying to those to whom they minister.

Unnecessary noise in the wards of the hospital may be a serious detriment to the restoration of patients to health. I have recently received a complaint from a patient who was in a room off a private hall of a large hospital where he told me that his stay was made hideous by the banging of doors, the rattling of dishes, the constant unnecessary tramping of visitors and employees along the hallway. All such practices should be stopped.

The attitude of all employees towards hospital property should be one of careful conservation. It is the duty of the superintendent to call the attention of nurses, as well as other employees, to their responsibility in handling hospital property. They should obey the rules laid down for its preservation, not because they are rules, but because they should feel that the conservation of the property is an obligation as binding on them as that of giving their full service to the nursing care of the patients.

The office of the hospital should be run along business lines. There should be a place for everything and everything in its place; this includes employees as well as records. Every hospital that deserves the name must be equipped with a proper register containing all the information of statistical and administrative character necessary to the making of vital statistics and the legal protection of the hospital. Except in emergency cases, the first medical thing that happens to a case on admission to a hospital is the taking of the history; its value depends upon the thoroughness and accuracy with which it is taken; its accuracy depends upon the ability of the doctor to draw out of the patient the salient points. What kind of a person do you propose to send to a patient to make on him the first and lasting impression of your hospital? What kind of instruction is he to have from the medical and administrative staff to prepare him for this very responsible work? Do you ever think what this laying open of his life secrets means to the patient? Is his confidence and feeling to be lightly considered? I say no. Our duty is not fully performed if we fail to protect the hospital and the patient in this respect. It is not the province of this paper to deal with the purely medical aspect of hospital management. It is assumed that every hospital is equipped with enough medical and surgical supplies and equipment to carry on its work, and that the medical talent devoted to it is equal to the demand made on it. I have known hospitals where histories were not kept beyond the necessary bookkeeping and registry requirements; such a condition is unfair to the hospital and the patient, while the commonwealth that supports the hospital is entitled to the statistical data they fail to keep. Adequate medical records must be kept from which at the end of every fiscal year a medical report showing the value of the medical work performed can be issued.

Besides the clerical force of the office there should be stationed at the door some employee to receive visitors. I think that the best kind of an individual for this position is a maid who corresponds to the parlor maid in any well regulated home. She should receive the visitor, show him to a seat, ask him the object of his visit, carry his card to the proper officer, and after delivering it, return to him and tell him that he will be seen as soon as the business of the hospital will allow. I know of no officer in the institution who could give as much satisfaction to the visitor as the individual who meets him at the door. I have within the last few years stood trembling in the outer halls of a hospital awaiting an opportunity to make my wants known, where my request has been taken by an august person, so impressed with his own importance that he has filled me with astonishment. I have sat waiting in the hallway of another hospital awaiting developments for one hour after being shown to a seat. I have seen in the institutions under by own charge visitors met at the doorway with scant courtesy. They have been sent to the waiting room and left there uninformed as to how long they would have to wait, or whether their message had been given to any person in authority, and in every instance I have said, that if opportunity ever offered I should certainly hold these examples up as the best illustration of what a hospital can do to show that it acts in direct opposition to the principles for which its name stands.

The telephone in the hospital is a medium for the quick sending of information from one department to another. It should always be remembered that a telephone order of any kind should be confirmed by an order in writing. The word of the man on either end is equally valuable, and if a balance were struck on the failure of management on account of telephone orders there would be a large deficit on the side of efficiency. Notices of death, serious conditions of patients, complicating conditions are best conveyed by telegrams. Inability on the part of the company to deliver the telegram will result in immediate notice to the sender to that effect. The trivial cost of the telegram is very small indeed as compared to the importance of the message conveyed, and you have an absolute witness to your effort to properly and quickly send reliable information. Special messengers, telephones and Uncle Sam's post are all good, but none of them to my mind are to be compared to the reliable telegraph company. Confirmation in writing of telephone communications leaves no question of doubt, and prevents an unnecessary distribution of responsibility for failure to comprehend or carry out instructions.

When patients are admitted to the hospital with complicating conditions on admission, which might give rise later to a question of whether or not the complication was a result of hospital management, it is well to give notice at once that the patient was admitted to the hospital suffering with the complication. This allows the friends and relatives to make immediate investigation and releases the hospital from the necessity of an explanation when the patient is discharged.

The bookkeeping department of the hospital should be efficiently established. There is no hospital small enough to omit the keeping of books, the making of inventory and the issuance of an annual report. The same thing is true in regard to the storehouse. Every hospital should receive its supplies in the form of stores and issue them from stores on requisitions written by the director of the activity needing them countersigned by the superintendent. Requisitions on stores should be made on specially provided blanks from which, after stores have been issued, the books of the hospital can be posted. Additions to the inventory should be made regularly from the books of the hospital and deductions from the inventory should be made from lists of condemned articles presented to the employee in charge of the stores in exchange for the new ones desired. Close adherence to these rules insures two things, first that all of a supply will be used, second, that an article of equipment will be worn out before replaced and there will not be any unnecessary duplication of an article in any activity. If the hospital is only large enough to have a very small number of employees, such a system should begin at the first. There is no stone in the foundation of the institution which is more important than this one. Bad finances usually indicate bad treatment. Supplies should be repeatedly inspected whether purchased on a specification or by the cook going out with the market basket. The quality of supplies should always be good. Where an attempt at economy is practised, by the purchase of low grade food stuffs, the amount of table waste and the loss in energy of employees will represent more money than would have been spent in the purchase of good foods in the first place.

Careless criticism of good food by a dyspeptic superintendent in the presence of patients and employees makes it bad food to them. All officers and employees should be cautioned against loud talking and against discussing the policies of the institution in the presence of any persons other than those to whom such policies are of personal and professional interest.

All hospitals see to it that medical attention is strictly given; how few take any interest in the feeding of the patient! It is the bane of every hospital I have ever visited, where the wards are of a considerable size, that there is a singular disregard of the needs of the patient in the dining room. The dietary table of the dining room service should be so arranged as to contain the greatest variety of foods possible to the resources of the hospital.

The establishment of a basic dietary table will be found to be not only a convenience, but a saving proposition as well. A table of menus should be made and adhered to; and in making menus the heads of divisions should be consulted. It is better to give them what they want and restrict the variety, than to serve an abundance of things that they will not eat. You do not confer a favor on the various members of your menu committee when you appoint them, but you do make them perform their proper duties. Meals should be served in such a way that the recipients of them will not be able to tell by experience just what each day has in store for them in the way of food. Menus should be arranged numerically from one to ten, or fourteen to twenty-eight and repeat irregularly, not by week or month. In the arrangement of tables, neat linen, a center piece of flowers, an assignment of chairs that enables congenial groups to be together will add materially to the general goodwill of employees. The enforcement of stringent regulations against diners at table ordering the serving girls or criticising the service or the food, will do away with many complaints commonly made in the hospital about the diet and service. Constructive helpful criticism about any part of the service should be invited and thankfully received in the office. This should be understood by employees and they should be encouraged to submit such in writing.

Choosing a cook is probably one of the biggest little things about a hospital. We all know the qualities that go to make up a good cook, but do we all know that half of the responsibility and half of the success of the cook rests on us? The average cook saves or wastes in direct proportion to the saving or wasteful disposition of the superintendent of the housekeeping department. The cook does not make the menus, but the menus very often make the cook.

In a large hospital a dietitian is a useful and sometimes necessary adjunct. Her usefulness like that of the cook depends upon the common sense of her immediate superior. It is a joke to believe that you can feed people on calories; it is a calamity to reject the value of calories in balancing a ration. It is just as easy to give people food that they like and that contains the appropriate number of calories as it is to give them a highly nutritious and wholly unappetizing food they don't like and won't eat.

For the last few years I have had a good many fool food ideas advanced to me. I have had a good many calorifically good, but personally distasteful meals proposed to me, and I am more convinced than ever that it is food, not calories, that is needed in the kitchens and dining rooms of our hospitals. Mark you, I said kitchens and dining rooms. In the office it should be calories. I should say that next to a knowledge of weights and measures a knowledge of calories is most valuable to a dietitian and a medical superintendent. Without a thorough knowledge of physiology I should say that a knowledge of calories was about as valuable to anybody as a sextant in a fog.

Recently the Department of Health through its Bureau of Public Health Education established an Educational Lunch Room where the menus are printed in such a way as to show the food, its price, quality, number of calories and protein in grams. The tendency of the present time seems to be toward a closer knowledge of food values, and considering the hard work performed by nurses, the adoption of such a plan in the doctors' and nurses' dining room might add to their knowledge of how to take care of them as well as to supply them with information, that they may answer intelligently questions asked by patients about food values.

One of the big things in hospital work is the question of light, heat and power. We spend a lot of time and money in selecting the right kind of boilers, but we neglect to instruct our subordinates in how to fire them. We waste more money still in fuel saving devices, and we let a lot of heat units go up the chimney and a lot more go out with the cinders. In our wards we call for more steam, and when it gets too hot we open up transoms and windows instead of turning off the steam at the radiators.

We turn on a flood of light for some particular purpose and when it has served its end we let it go on burning at three cents per K. W. hour or a dollar a thousand feet of gas, and wonder what other device we can get that will cut down the coal bills or the lighting bills. We allow water to drip from faucets until erosion has so injured them that they have to be reseated. We ought to have a noisy water meter in the office to remind us what we lose through neglecting leaks. Our carpenters and other mechanics should be trained to make minor repairs without specific orders. The grounds of the hospitals should be kept in a neat and clean condition.

I think the mortuary chapel and its attendants should receive our careful consideration. Somebody has said that there are three great events in the life of a man, his birth, his marriage and his death. In hospitals with an active service we are apt to forget the solemnity of death. We forget that in every death we are being shown the immutability of Nature, and above all we forget that what is one of the regretable but inevitable routines of hospital work is a tragedy in the lives of the people who are left to mourn for those who die. The red tape of office business, the cold and careless, the sometimes almost callous treatment of the afflicted, should be suppressed and a due consideration for the bereaved should be given them, even if this solemn event has not raised in us and all of our associates those meditations and reflections that undoubtedly it should.

You will find in one hospital engine room smooth working machinery, there is no creaking or grinding of the parts. The engineer is on the job, he is giving the grease cups little turns, he is supplying little drops of oil here and there all the time, and his attention to small details is making all his work go without friction. In another hospital you will find creaking, grinding, rattling machinery due to carelessness and neglect of these things, and it is just the same with your management of your hospital. The big engine will move and the hospital will go on with groans and complaints, all of which could be avoided by the attention to little things, the smallest of which is not too small to merit your attention if it but adds a little to the smooth running of the hospital or the comfort of a patient.

DR. WILSON: I want to say here a word about internes jumping their contracts, a point which I did not include in the paper. During the past year, I have had half a dozen internes jump their contracts with me. Well, that is a small matter. I usually call up the hospital to which they are going and say, "Such-and-such an individual has left my hospital and is going to yours," and you will be surprised to hear that in three instances the superintendents said to me, "Well, I am sorry you are in bad luck, but I consider that I am in good luck." It seems a small matter, but it is one that causes considerable annoyance when you have made your arrangements for your internes to cover the period of time that your internes are to give. I assume that every hospital makes a contract with its internes. I have an application blank which is filled in in the form of a contract and the interne is asked to sign.

Of all the small things that happen in a hospital, I think none has more influence than that of a man in authority going around and making remarks in regard to the food, the linen, etc. It has an immediate effect on all that hear him and it is very natural that it should be so.

Mr. Bartine: You have all heard the interesting and instructive paper read by Dr. Wilson. It is now open for general discussion.

The Acting-President took the Chair.

DISCUSSION.

Mr. O. H. Bartine, New York City: If I may start the discussion going, Dr. Wilson spoke first upon the case of the drink of water in a hospital as one of the small things and one of the bigger things. In conversation about two months ago with Mr. Secretary of the Board of Charities, he said that in that department they were holding monthly meetings, round table meetings, which were of great interest to him as well as to the officers of the department, including the Commissioner, and that the drink of water problem was the most interesting discussion that they ever have, that they had found that the bigger things about the institution, the boiler plant, the care of the patient, the operative end, and all those points, had been well cared for, but that there is many a patient in the institution who hesitates to ask for a drink of water. One discussion, in fact, lasted over two hours and every hospital superintendent and nurse admitted that from that standpoint the patient had been neglected. Another point brought out by Dr. Wilson is very interesting. That is in reference to the butcher. The superintendent of one of the representative institutions of the state told me only two weeks ago that he had been quite fortunate in having a competent butcher during the past year. Though he had had as many patients during the past year as ever before, this butcher had reduced their meat bill from $650.00 a month to $450.00 a month, a reduction of thirty per cent. He has gone into that subject very carefully and he feels that if he should lose that butcher the meat bill might not go back to the larger figures, but, at the same time, he would not be able to hold it down.

Dr. W. H. Walsh, Philadelphia: The particular point of Dr. Wilson's paper that interested me was the question of internes. I think that the hospitals in New York City must be getting in pretty bad shape if they are accepting internes who deliberately break their contracts. I do not know of any reputable hospital in the City of Philadelphia that would deliberately take a man who had broken his contract with another hospital. I had an experience a very short time ago with a man who attempted this thing. I tried to warn him of the trouble he was going to get into if he persisted in leaving before his term of service was up. Unfortunately, you do not get very much support from the medical staff in those matters. The medical staff as a rule are not particularly anxious to excite the enmity of an interne. Just why this is, I really cannot conjecture, but three men on that staff came to me and asked if something could not be done to allow this man to break his contract. I told them, no, nothing could be done. I understood that he was going to accept the practice of a man up state somewhere, so

I just wrote this man a letter, told him that this particular interne was deliberately breaking his contract, but that if he did so he would be dishonorably discharged from the hospital, that his name would be removed from the list of resident physicians and that his references would be notified of his dishonorable conduct. The man who was going to give him his practice did not believe that he wanted just that kind of a man and, as a consequence, the man remained in the hospital.

Dr. C. H. Shutt, St. Louis: Dr. Walsh has touched upon a point that also appeals to me. I feel that the members of this Association are perhaps in a better position than the members of any other association to judge medical men. The superintendents and the boards of trustees of hospitals are certainly in very good position to know what kind of medical service the patients, as a rule, receive. I think that every hospital to a greater or less extent has some little difficulty with its internes. I know of some hospitals—I believe there is one in Philadelphia—that requires a one hundred dollar deposit before an interne is accepted. I think that is perhaps a very good plan. At the same time, it possibly at times prevents certain men from accepting the interneships who would be very good men to the hospital. This, of course, is one good way of doing and, under present condition, is perhaps as good as we could desire.

In St. Louis, we have a hospital utilizing a great many internes and we have thus far made it a practice to require them to deposit their diplomas when they receive their appointments, and they sign an agreement to the effect that they deposit this diploma as evidence of good faith and agree to leave it throughout the year unless earlier released. We last year lost about four men out of sixty. This year, I presume, the number is a little higher, seven or eight men. We had a discussion with them and tried to persuade them to remain and some of them did. In other words, we did not go after it as strongly as we might have, but sometimes it does mean a great deal to these young men to be able to get away a little earlier, it means much in their future life. However, I do believe that the hospitals ought to be in the position more of being obligated to than of being obligated for; in other words, the interne should feel that he has obligations to discharge instead of others having obligations to discharge toward him. I believe that this Association can very reasonably go on record in favor of the nation-wide movement for requiring physicians to have a year of hospital experience before they are granted a diploma or a license to practice in the various states. I am inclined to believe that until such condition exists we shall have difficulty with our internes, that when we ask them to make a call at a certain hour, an unseasonable hour, we shall not be able to say they must do it, until they feel that they must have that hospital certificate at the end of a year before they can go further with their practice.

The medical staff of an institution, as a rule, have very little idea of what an interne is doing, as to what kind of service he is rendering to the hospital. The medical man is a most peculiar genus of the human family. He looks at things differently from what the average individual does. In the case Dr. Walsh mentions, no doubt this interne just went to those men, perhaps they were old professors of his, perhaps they were members of fraternities that he belonged to, and he suggested that they might speak to the superintendent, and they said, "Why, certainly, we will be glad to do the favor for you." And they will continue to do that unless there is a law which requires these men to spend a full year in a hospital. Of course, there are some hospitals which really cannot ask a man to spend a full year, but those things can be gone over and worked out by the various state boards.

I hardly know in what form to put the motion, but if it meets with the favor of the membership I would like to suggest that some committee be embodied with power to take up this matter, either with the educational committee of the American Medical Association, or to memorialize, perhaps, the legislatures of each state on this matter during the next year. I think if it did nothing else, it would draw the attention of the various states to the activities of this Association and I think perhaps that the publicity that the thing would receive indirectly might be a great deal of benefit not only to the hospitals but to the medical men themselves. As I say, I think there is no body of people better capable of insisting that medical men should have a year of hospital training before they practise. I think that hospitals which are not so fortunate as to have a closed staff certainly meet with experiences almost daily which show that many of their men would do much better if they had a more practical training before starting in to practice. If some one would suggest some method of going about this, I would be very glad to second it.

PRESIDENT: I rather feel that the question of an interne year in hospitals is a matter for the educational bodies to take up rather than the Hospital Association. We would welcome such a change as that, it would be very greatly to the advantage of hospitals, but I feel it is rather more in the sphere of the educator, inasmuch as the hospital year is demanded from the standpoint of the education of physicians.

MR. J. B. FRANKLIN, Dallas: Touching the interne question, I would like to ask a question—to be a little bit more clear, in regard to the advisability of having female internes in a hospital. We have a hospital of about 250 beds, occupied continuously, and just before I left home, I had to recommend internes for another year. Among the number there was recommended one lady. She had the highest grades of any one in her class. Now, this hospital covers all grades of service, and I would like to know if it is practicable for that lady to do the work straight through as the other internes do.

PRESIDENT: I would suggest, Doctor, your taking that up at the question box which follows at the end of the meeting tonight. That would be a very good and proper question to present at that time. We shall have to hurry, as it will be necessary for us to leave here in a few minutes, and I will call for the next paper, that of Mr. Warren C. Hill, Architect, Kendall, Taylor Company, Boston, on "The Hospital Superintendent and the Architect."

THE HOSPITAL SUPERINTENDENT AND THE ARCHITECT.

By Warren C. Hill,
Of Kendall, Taylor & Co., Architects, Boston, Mass.

The title of this paper is of the late Dr. Mann's own coinage, and the subject was approached with a large degree of hesitation.

Much has been written and said of what the hospital superintendent demands of the architect in connection with the planning and erection of hospital buildings, but little, so far as I know, has been written of what the architect may reasonably ask of the superintendent.

The annual expenditure for hospital buildings in this country is enormous—Mr. Bartine says it is something like $125,000,000. This sum is a conservative estimate if hospitals for the treatment of mental diseases are included in his summary. Setting aside this class of patients as being to a certain extent involuntary, the increase in the use and patronage of the general hospital is still striking. This increase is, I believe, not alone due to the increase in population, but very largely to the constantly growing feeling among our people, that the care and treatment they receive in the hospital is not experimental, but that the hospital is a place of hope and happy achievement, rather than a place of despair and death.

$125,000,000 is a vast expenditure, but, even this may be said to be small, compared to the cost of maintaining the hospitals already built. Once raised and expended this first cost belongs to the past, while the maintenance is an annual and ever increasing affair. The amount and the burden of maintenance very largely depends on how and by whom the initial expenditures are made. The cause of heavy maintenance charges is very often an incomplete study of the hospital in its preliminary stages, or the lack of a comprehensive scheme for development, faulty buildings, poorly arranged or too cheaply constructed. These things lay upon the superintendent and his assistants a burden of waste and restrictions which cannot be shaken off or avoided, and must be carried forward from year to year.

One of the best and most complete of our Eastern hospitals was begun more than half a century ago, and was so planned at the start that subsequent additions, and there have been many, one by one fitted into place like dominos. So completely do the newer buildings supplement the older that one might think the whole had been foreseen and planned from the outset.

You, superintendents and administrators, who may feel conscious of defects in planning and organization, in short, of an unbalanced institution, struggling vainly against the increasing cost of maintenance, realize perhaps that a better plan and a better arrangement of units would relieve you of much that now perplexes, and you will perhaps be inclined to envy the man who has given the best years of his life to the growth of this hospital and who recently said to the writer that "it has been a happy one."

Contemplating the situation from the point of view of a building proposition, whether it be a new plant or an addition, we have a condition which, from the first, will require on the part of the trustees, the superintendent, and the architect, a greater amount of time and study than is needed for any other type of building construction with which I am familiar.

With a small hospital it is the exception, rather than the rule, that a superintendent is engaged prior to building. The moderate sized hospital more frequently has the benefit of his advice by consultation, while he is elsewhere occupied or at liberty, but the larger hospitals almost invariably build around the superintendent, or, in other words, engage him before anything in the nature of definite planning is done.

In the first case and in the second as well, the burden falls on the building committee, and in many instances there is some one member of the committee who has a grasp of the situation and an appreciation of the essential facts, which would make him a successful hospital administrator should he devote himself to this field, instead of to that in which he has perhaps already won recognition.

The ramifications of this subject are such as to make it difficult to stick closely to our text, but, to return to our superintendent and his architect, let us assume that the trustees, through their committee on building, have placed in the superintendent's hands, authority for preliminary plans and the subsequent execution of the work, reserving, of course, such rights and authority as properly belong to them alone.

It is undoubtedly of the utmost advantage to select an architect who has had experience in hospital construction—I mean one who not only knows of sanitary doors and coved bases, but one who knows the basic principles upon which depend the economical and efficient administration of the hospital, one who is enough of a specialist to approach the task as a new proposition, not to be solved by a repetition of what "I did at Blankville last year," but by the application of clear and well understood principles to the existing situation.

If it be a new proposition, the superintendent can embody the results of his own experience and study to a far greater extent than is usually possible if it be an addition or extension to an existing plant.

These additions often produce for both the superintendent and the architect, the most perplexing sort of problems.

It is for the superintendent, in consultation, to share with his architects the results of his special experience.

It is for the architect so to use his experience and familiarity with hospital work that the superintendent may be relieved of a large amount of the burden of details without in any way abrogating his initiative and authority.

It is to be remembered that during the planning and construction period the superintendent is often doing double duty; carrying on his own work and adding to it extra burdens and responsibilities.

Some rare characters, like the late Dr. William O. Mann, reserve to themselves all initiative and authority, carry an immense amount of detail, and figuratively inhale brick, mortar and other essentials, gleaning from their subordinates all the various information not already carried in their minds, and do a hundred and one other things in addition to their regular duties, of which their architects might relieve them. Such men may and often do, shorten their period of usefulness by their arduous undertakings.

It is of the greatest assistance to the architect if the superintendent has acquired the ability to read sketches and to understand the working drawings and visualize them. The superintendent who carries a two foot rule or a draughtsman's scale in his pocket, is a joy; he has an appreciation of feet and inches when drawn to scale, and whatever temperamental characteristics either party may have, they will each have a common emblem and a working tool that bridges many a gulf of misunderstanding.

Much might be written of the pleasure to be had in the mutual interchange of ideas over a hospital problem; of the education to be derived from long hours spent in conference with large minded men and women, who bring to the problem the results of practical experience. The frank expression of ideas on both sides may lead at times to a radical difference of opinion, but more often to a prompt acceptance of the value of the practical as against the theoretical, and in any case, to a better appreciation of each other's point of view. There are many beautiful theories that do not work in practice, and an ounce of experience will often vanquish pounds of theoretical propositions. Such should be the nature of conferences between the superintendent and his architect.

The superintendent should, and generally does, know what is wanted. It is his business to supply the architect with this information orally or by means of sketches; it is not necessary that he be a draughtsman; it is the province of the architect to collate and place these in proper form for further examination and study. The more often the studies can be considered, the better. Here again the architect with real hospital experience has the advantage. With his better grasp of the general situation he can prepare his plans with less revising and without the necessity of a careful scrutiny by the superintendent or the building committee on the lookout for undesirable inhabitants in the wood pile. Step by step as the studies, the working drawings and specifications progress, further data and information will be supplied by the superintendent. Discussion of design and aesthetic features should be left as far as possible to the architect. The plan may not be his, but the exterior should be, save perhaps for the proviso that no interior advantage or useful feature should be sacrificed for a mere surface appearance of beauty. There is always a beauty inherent in the useful building thoroughly and skilfully designed and carried out. A hospital should never be an ugly building, but, it should be primarily an efficient and economical building in operation and maintenance. An old writer has wisely said, "Well building hath three conditions—commoditie, fitness and delight." The last should be the result of the first two.

As the plans progress further and the construction stage approaches, the discussion of details will appear; materials, partitions, floors, painting, glazing, etc., should be carefully gone over. A reasonable knowledge on the part of the superintendent of the forty-seven trades entering into the building, will prevent misunderstandings, and assist in the team work so essential between the two, and may prevent many so-called "architectural mistakes."

Many points will show up in the progress of the building, particularly towards the finishing, which may not have been clearly understood from the plans by the superintendent, or upon which the architect may not have clearly apprehended his requirements. It has occurred to the writer that after the plans have been completed, it would be a good idea to go over the specification with the superintendent a second time, beginning at the end and reading backwards, section by section, to the beginning. We find that to outline these in that way is often of material assistance.

One may well ask how the superintendent can be expected to know his own profession, be a financier, an administrator and many other things, and, in addition, have a working knowledge of another profession. It is much to expect and yet there are many such.

It is not to be expected that all of the details of the several departments of the institution entering into a piece of work, can be furnished by the superintendent, and the heads of his various departments must supplement his general knowledge with the minutiae—the method of transmission varies; from one standpoint it is well that it come through the superintendent, or at least be stamped with his authority or approval. One of the writer's happiest recollections is in the nature of a round table composed of the superintendent, the active member of his building committee, the architect, chief engineer, superintendent of nurses, dietitian, etc. They may not all have been present at one time, but the four first named were at all conferences. The results obtained in this particular case, were accomplished with the minimum amount of friction, and proved satisfactory to all parties.

We have heard of building committees who keep a check on the superintendent, because he or she may be extravagant. I have never met one who could not be trusted on this account. Many of them spend most of their time during the preparation of plans and during construction, studying means to keep the cost down to minimum and will often argue for economy's sake, to do without many things which they know would add to efficiency, which they know must eventually be needed, and the omission of which they feel to be temporizing with the situation.

At this point the experienced architect can and should stand firmly for essentials in equipment and accommodation. He must not let essential things be neglected, even at the risk of being thought extravagant. When the need appears and begins to be keenly felt, the trustees are apt to ask why he did not insist upon what he knew to be necessary.

To sum up my ideas of the relations between the superintendent and the architect, it may be said that the architect is primarily the constructor, and to his knowledge of construction and practical details of building and of the aesthetic conditions, due deference should be paid. That there are certain broad principles of arrangement and mechanical operation in which he should be an expert and which the superintendent will gladly leave to his judgment; that the superintendent, as an expert in the care of the sick and the administration of the hospital, does know his needs, and should be supplied with the conveniences he demands; that the experience of the one may and should complement the knowledge of the other, and that each should respect and give fair and reasonable consideration to the views of the other. If this is done, there need be no confliction, and the results will be satisfactory.

President: You have all heard the very interesting paper. The time is short and I would suggest that if there is any one present who desires to discuss the paper in detail I will very gladly provide him with it and permit him to read it. I would also suggest that we open our meeting tonight by a discussion of this paper. I think it is a paper that is worthy of discussion and entitled to it, and if there is no objection, we will postpone the discussion in order to finish our meeting this morning. Dr. Peters will be obliged to leave us very shortly and I have advanced his paper. Dr. John M. Peters, Superintendent Rhode Island Hospital, Providence, R. I. The paper is on "Fire Protection and Prevention in Old Hospitals."

FIRE PROTECTION AND PREVENTION IN OLD HOSPITALS.

By Dr. John M. Peters,
Superintendent Rhode Island Hospital, Providence, R. I.

Prevention, rather than cure, is as sound and as practical when applied to the subject of fire as to that of disease. Preventive medicine is the aim of scientific medicine of today, and preventive measures against the starting and the control of fires are the aims of men and corporations whose time, thought and money are given towards these ends.

We point with pride to our wonderful fire departments, to their equipment, to the promptness with which their apparatus is brought to the scene of fire, to the bravery of the men, etc., yet figures show that the number of fires in this country is out of all proportion to the number occurring in foreign cities, and that the human and financial losses are very much greater. Why is this so? Why should it continue to be so?

Here where wood has been so cheap, where inadequate laws are in force, where adequate laws are not enforced, where carelessness is allowed, where the main question after a fire is, "What was the loss?", and not "What was the cause?", the matter is held lightly unless the damage to either life or property is heavy.

As my subject is Fire Protection and Prevention in Old Hospitals, I must limit my remarks to what can and should be done to this end in buildings constructed before the importance of this subject was appreciated by institutional people.

To find out what fire insurance companies think of institutions as fire risks, ask your agent for the rate as compared to that for insuring factories, places of business or residences.

Factory mutual companies were organized to insure factory buildings, and are among the largest companies in the world. For years they have employed experts, have experimented as to materials, construction, and safeguards. Before the property of a corporation is accepted as a risk, it is necessary for that corporation to meet the requirements of these insurance companies, and periodically after that, inspectors come at odd intervals during the year, make thorough inspections of the property and report in writing as to the condition of the plant, make recommendations which are checked up by the next inspectors who are different men, and who, if the recommendations are urgent and have not been complied with, will report to the Home Office, which office will want to know the reason why.

I am indebted for what immediately follows in the paper to the president and engineers of the Blackstone Mutual Fire Insurance Company, one of the factory mutual fire insurance companies.

The engineers of the Blackstone Mutual Fire Insurance Company report as follows on "Prevention of Fires in Hospitals":—

At present hospitals fall in that class of fire risks where a full protective system of automatic sprinklers etc. has not become the rule as it has in high-grade manufacturing plants.

The following notes are intended to indicate a protection against fire which should be installed, and the principal precautions to be observed in order to make a hospital as nearly immune from loss by fire as seems practicable without the full protective equipment implied by 100% sprinkler installation.

1. **Order and Neatness.** It is a fundamental principle applying to all buildings for whatever purpose they may be used that the fire risk is greatly reduced by maintaining excellent conditions of order and neatness throughout the premises. This fact has long been recognized and is emphasized by the constantly recurring fires in second-rate apartment houses where the causes of fire are directly traceable to piles of rubbish left under stairs, in dark corners of basements, and in similar remote places. Not only do piles of refuse matter furnish light fuel for maintaining a brisk fire, but they often contain substances which may start spontaneous combustion. The materials most likely to ignite spontaneously are certain oils which have been used on waste, or polishing cloths, or spilled into waste matter. It is known, for instance, that a very small amount of oil in contact with lamp black will ignite spontaneously, especially under

conditions of high humidity. Linseed oil is very dangerous.

All waste matter should be removed each day to points where fire resulting in them could do no harm. Combustible waste is generally burned under the boilers each night. All waste papers, cloths, shavings, etc., should be collected during the day in metal cans, and should be kept in these until finally destroyed.

2. **Automatic Sprinklers.** The points at which automatic sprinklers will seem necessary will depend somewhat upon the construction of buildings. Under general conditions it may be stated that sprinklers should be installed in attics, basements, kitchens, power and heating plants, work rooms such as sewing rooms. If power and heating plants are of non-combustible construction throughout, sprinklers are not required.

Water should be supplied under good pressure to sprinkler and hose lines through a pipe not less than six inch diameter connected to a large size public water main. If there is a yard where hydrants may be installed, this water connection should be not less than 8-inch diameter. In some cases it may be necessary to install an elevated tank or a pump as secondary water supply.

3. **Small Hose.** In portions of the buildings not enumerated above it is desirable that lines of small hose be available. It is best that the hose be attached to standpipes which should preferably be located in or near stair towers, so that the hose may be used up to the last moment, then the person using it may escape safely at the stairway. The size of this hose should be not over 1½-inch diameter, 1¼-inch diameter being the more common size. The nozzle has an outlet of about ⅜-inch diameter. Under high water pressure hose of this size can be handled easily by women and others not accustomed to handling fire apparatus, while large hose is sometimes dangerous for one strong man to hold alone.

4. **Fire Extinguishers.** It is desirable that for "first aid" purposes there be quickly available in all parts of the plant a very simple extinguishing agent of one sort or another. Where their appearance is not objectionable pails of water are the simplest, most obvious and easily applied of these "first aids." These are usually covered and are kept on shelves some 5 feet above the floor and in groups of three or four each. One fire pail to each 1,200 or 1,500 feet of floor surface should be sufficient.

Another very good arrangement is on the market consisting of a painted metal barrel with hinged cover, nearly filled with water, and inside this are placed four to six metal pails nested together.

Chemical extinguishers when well made are very useful and not objectionable as to appearance. They are rather heavy, however, for women to use, and the method of use is not so obvious as in the case of fire pails. This type of extinguisher is not reliable after about one year, and should be recharged at least as often as this. For this purpose it is well to have the total outfit of extinguishers divided into groups, the recharging of one group following that of another at some stated interval.

Dry powder extinguishers are efficient in extinguishing fires at inception. These usually consist of a tin tube filled with bi-carbonate of soda, which has a smothering effect. These are easily used, but soon exhausted, and the method of use might not be entirely obvious in case of excitement due to fire.

The "pyrene" extinguishers recently put upon the market are also efficient under certain conditions. If the fire is confined to a small area without a decided draft of air across it, this extinguisher works well; otherwise the vapor which forms a smothering blanket over the fire is easily dissipated and but little good results. The extinguishing element of "pyrene" is carbon tetrachloride.

5. **Hydrants and Hose.** Whenever there is any yard room about the buildings hydrants should be placed about 200 feet apart and furnished with a good supply of 2½-inch cotton rubber-lined hose, underwriter play pipes with handles, the nozzles being 1⅛-inch diameter. It is desirable that the hose be kept in a hose house built over the hydrant, and the house should contain a good supply of spanners, hydrant wrenches, fire axes and crow-bars.

6. **Cut-offs.** Buildings should be separated into units of moderate size, this separation being by means of fire doors at the ends of passages connecting buildings, or in the case of very long buildings, the doors may be placed also at partition walls. Of course, there should be no windows in such walls if the fire stop is to be efficient. If windows are necessary at points where fire

might easily be communicated from one unit to another, these should properly be of steel sash glazed with wire glass.

The best type of fire door is composed of a three-ply wood core covered with terne plates, the joints being locked with double fold in such a way that no nails are exposed. These doors are mounted on a heavy steel bar track inclined so as to cause them to close by gravity. They may normally be held open by a weighted cord or chain containing a fusible link placed in a door opening so that the first blast of hot air will cause it to fuse and allow the door to close.

These doors may be placed in a recess in the wall if the latter is constructed with this idea in mind, in which case the door is invisible ordinarily.

Not only should rooms on the same floor be separated from each other, but there should be provision to prevent fire from spreading from one story to another. This provision is usually made by the use of fire doors at openings leading into elevator and stair towers. Unless thus protected such towers are open avenues for the rapid spread of fire to the upper stories. If the stairs cannot be placed in the tower, they should be enclosed with fire retardant material to obtain as nearly as possible the same result. Dumb-waiters should be enclosed with fire retardant material, and openings should be protected by doors or shutters which will be automatically released by fusible links in case of fire.

7. **Hollow Spaces.** The rapid spread of fire and stubborn resistance to being extinguished are greatly promoted by floors and partitions so framed and finished that there are hollow spaces between the two surfaces. This hollow construction in joisted framing is often felt necessary where a finished smooth ceiling is required, but in attics and basements it is usually feasible to eliminate the finish at the lower surface. The "open joist" construction which is then presented makes the work of extinguishing fires much easier.

8. **Gas and Gas Lights.** As a means of lighting, gas is fortunately giving place to electricity. Its continued use for many other purposes makes it necessary to give careful attention to its proper installation and use.

It is desirable that the supply to each building or at least the main supply to the plant as a whole be controllable outside the walls. This is usually done by an outside valve or by a valve inside the building with the stem extending through the wall.

So far as possible all gas lights should be fixed in position and should be piped with iron piping. The use of gas through rubber tubing is considered very dangerous as the rubber is not impervious to the flow of gas.

Where there is any danger that gas lights and inflammable material may come into contact with each other, the burner should be surrounded by a wire guard.

9. **Electric Wiring and Lights.** Probably the greatest danger from electricity is in short circuits due to the insulation becoming injured either by sudden blows or by gradual wearing. The best method of wiring is considered to be by enclosing the wires in tubular conduits made for this purpose.

If it is necessary to transform the current before using it, and if oil cooled transformers are used, these should be placed outside the building. In a large installation, a small fire-proof structure is best for containing the transformers, but if only a small amount of current is used, the transformers may be placed on poles at a safe distance from buildings. It is also desirable that the lines carrying the primary current be furnished with lightning arresters.

Fuses on the inside wiring should be of approved manufacture, and groups of these should be placed in closets with closely fitting doors. A metal closet is best for this purpose, though wooden closets lined with asbestos paper give fair protection.

There is such a variety of fuses on the market that no general directions as to selection can be given, but it may be said that it is well to avoid the refillable type. If electric lights are used in places where there are inflammable vapors, a vapor-proof lamp should be used.

When electricity is used for other purposes than lighting (e. g. for heating flat-irons), special care should be taken with the wiring to prevent rapid wearing of the insulation which may easily result in short circuits. When the wiring is much moved about as in the use of flat-irons and electric cutters, a weak spot is likely to develop by frequent bending. This point can easily be determined in advance, and should be protected by a coil of wire or similar means so that a short bend cannot occur.

In cases where current is used for heating, provision should be made against accidentally leaving the current active when it is supposed to be turned off. The best safeguard is to introduce a small "pilot light" in the circuit at a point high above the floor, so that it can be readily seen from any point of the room and will be burning so long as the current is flowing.

10. **Volatile Oils.** The main supply of any volatile oils used should be stored in metal tanks buried outside the building. The supply may best be drawn by means of small pumps designed for this purpose.

Benzine, gasoline, and naphtha should never be stored even in small quantities in a basement. The vapors of these oils are heavier than air, so that if stored in a room below the ground level the vapors cannot escape to the outer air. If it is necessary to store these oils in a room above the basement, such a room should be well ventilated at the floor level. It should be remembered that severe explosions may result from these vapors, and the selection of a storage place should be made with the view to prevent damage as much as possible if explosions should occur.

These volatile oils should be used directly from safety cans of approved construction. In general, cans containing not more than one pint will be found suitable for use in cleaning, etc.

11. **Fire Alarm.** A fire alarm box should be secured near the premises, if possible in the hospital yard, and in a conspicuous place.

12. **Fire Drill.** It is very important that the permanent attendants should be instructed and reviewed at intervals in the matter of behavior if a fire should occur. The principal points with which they should be very familiar are knowledge of location of exits and all means of reaching them, location and use of small hose, fire doors and extinguishers, and the location and operation of fire alarms. They should also know the principle of operation of the fire doors. They should understand the importance of keeping them free from any obstruction which would prevent them from closing in case of fire.

13. **Fire Brigade.** If possible, there should be an organization for the purpose of handling the large units of apparatus such as the hydrant hose streams. The men composing such an organization are usually engineers, firemen and such mechanics as may be employed.

14. **Weekly Inspection.** It should be the duty of some one reliable person to make an inspection at least as often as once a week of all fire fighting apparatus to see that everything is in place and in good condition, that all valves are open, that no combustible material is left near steam pipes, that all waste matter is promptly disposed of, and all fire doors unobstructed. He should make a detailed report to the superintendent or other official.

15. **Smoking.** It is desirable that smoking should be avoided in every part of all buildings. If it is not feasible to carry out such a rule it should be possible at least to prevent smoking in attics, basements, store rooms and such other places where a fire might not be discovered as soon as started.

16. **Watchman.** A reliable and able-bodied man should be employed to make rounds not more than one hour apart at night. There should be stations established at such points throughout the buildings that the watchman in visiting them will have the entire plant under his eye in making a complete round. A record of his call at these stations should be made on an electric or portable watchman's clock, so that positive evidence may be had that his visits were made at the appointed times.

From the report on "Fire Safety in Public Schools" made to Mayor John Purroy Mitchel of the City of New York, by Fire Commissioner Robert Adamson, I have abstracted the following:

Each building should have a city fire alarm signal box and gongs of mechanical, electro-mechanical or electrical construction.

Every building should have a sufficient number of fireproof stairways and of exits to permit of its occupants vacating the same.

Every building should have at least two exits, remote from each other.

All inside stairs should be built of fireproof material.

All stairways of all buildings should be enclosed on each floor with fire and smoke proof partitions and doors. All such doors should be self-closing.

All stairways should be not less than three feet wide, and not more than six feet wide without an intermediate handrail.

Stairway terminals should be free and clear of any and all obstructions that would interfere with or retard the flow of traffic in any manner.

All stairways, landings and passageways leading thereto should be kept free from all loose furniture or anything that blocks or narrows the exits.

All doors opening on stairways should open on platform equal to width of the door.

Outside fireproof stairways should be provided in buildings where present stairways are insufficient or inaccessible and it is found to be impracticable to build an inside fireproof stairway.

All terminals of outside stairways should lead to the street where possible; otherwise, if to yard or court, there should be provided proper fireproof exit to street without crowding any exit used for other stairways.

Half doors and windows at openings leading to fire-escapes should be replaced with doors of at least 6 feet 6 inches in height.

All clothes closets on half-story levels, opening on line of stairways, should be discontinued, unless there should be a separate stairway leading thereto.

All ladders leading to roofs should be of the double rung type, constructed of iron and braced in a firm and substantial manner. This includes all ladders leading to attics and those to a scuttle or bulkhead.

Platforms should be built in unfloored attics, at location of scuttle ladders, and protected with 2x3-inch guard-rail.

The stairs and connecting passageways leading from cellar to first story on or about the same level as the boiler-rooms should be enclosed in fireproof partitions, at either end of which there should be fitted a fireproof door, one of which should be hung on spring hinges or operated with an automatic spring, the other to be a standard automatic fire-door, which, when open, should be protected by a substantial steel enclosure.

All doors should be kept entirely clear of encroaching furniture. There should be a clear space at each door. Loose furniture should be removed from all aisles and passageways, which must be kept clear at all times.

Wooden doors along the line of exit stairways should be replaced with doors of fireproof material, provided with self-closing devices.

Where hooks are used to hold stairway doors open, they should be replaced with automatic catches or holding devices.

Exit signs should be provided, the letters and figures on which should be not less than four inches high. All movable signs should be of substantial material.

All doorways from hall ways should be designated by exit signs, numbered on all floors alike, as, for instance, a stairway shall be numbered the same on all floors. After all stairways have been thus numbered, the succeeding numbers may be used for any other exits.

In all buildings, lights with red globes should be provided over all exit doors and stairways, and outside fire-escapes should be properly illuminated at night.

The doors of all exits should open out.

In every case where practicable the floor areas should be divided by approved fireproof partitions, all openings in which should be protected by self-closing fireproof doors.

Attics and open cellars should not be used for the storage of furniture, books, lumber, etc.

Special provision of a fireproof storage room in cellar or basement should be made therefor.

Benches and the floors about the same in carpentry work rooms should be kept clear of all accumulations of sawdust, shavings and litter of all kinds.

All closets under stairs should be removed wherever possible. Those that cannot be removed should be vacated and kept securely closed against use.

Janitor's storerooms, in which supplies such as oil waste or paint are kept, should be of metal or other fireproof material, with self-closing doors.

All doors, windows and transoms in storerooms should be of fire-resisting materials.

Enclosures of fire-resisting material, with proper vents and self-closing door, should be provided for storage of oils, etc.

Enclosures of fire-resisting materials should be provided for storage of sawdust.

Metal receptacles, with automatic-closing covers, should be provided to receive waste paper and refuse.

Fireproof closets, with self-closing doors, should be provided for storage of paints, oils, etc.

Unprotected wood enclosures should not be maintained about boilers, machinery, pumps, coalbins, etc.

All brick-enclosed coalbins should be constructed so as to have an outlet at each end to the outer air, consisting of an eight-inch pipe, so that air may circulate through the same.

All wood chutes or shafts should be made fireproof.

All light shafts should be constructed of fire-resisting material throughout, or closed up if conditions warrant.

All wood lining under soffits of stairs should be covered with fireproof material.

The ceilings of all boiler-rooms, cellars and basements and all wood ceilings of non-fireproof buildings should be fireproofed.

All boiler-rooms should have two means of exit; where below ground level, one to be by means of an iron ladder to an areaway.

All attics of non-fireproof buildings should have at least one approved fire-stop, with an additional stop for all in excess of 5,000 square feet of area or fraction thereof. All doors through same should be fireproof and hung on strong spring hinges. Partitions should be of plaster board, covered with 26-gauge metal, or other approved.

In large open attics, where subdivisions are already made or provided for, means of access should be provided to each of such subdivisions from top floors.

A ventilator or skylight should be installed over each section, in the proportion of 100 square feet to 5,000 feet floor area, and same should be protected by wire guards.

All frame structures in courtyards should be removed.

Steam or hot-water heating pipes should not be placed within two inches of any timber or woodwork, unless the same is protected by a metal shield. When so protected, the distance should not be less than one inch.

All steam or hot-water heating pipes passing through floors and ceilings of lath and plastered partitions should be protected by a metal tube one inch larger in diameter than the pipe, having a metal cap at the floor, and where they are run in a horizontal direction between a floor and a ceiling, a metal shield should be placed on the under side of the floor over them, and on the sides of wood beams running parallel with said pipe.

All vertical wood boxes or castings protecting the coverings on steam or hot-water heating pipes or piping in which the water contained therein exceeds 200 degrees F., should be replaced with metal.

All indirect stack enclosures of wood should be removed and replaced with those of metal as rapidly as possible.

All steam coils, radiators or pipes in wardrobes should be protected by a screen or heavy wire netting so that clothing may not come in contact therewith.

All steam radiators or coils in all halls or passageways should be protected by metal shields. All vertical steam pipes and returns within reach should be covered with insulating material protected by metal.

All openings through floors and partitions through which steam or other pipes pass should be made secure against the passage of fire and smoke by the use of noncombustible materials.

Floor registers should be protected by a screen of ½-inch mesh galvanized wire, fastened up close to the underside thereof.

All gas service mains should be fitted with a stopcock at or near the curb.

The use of all swinging gas brackets for any purpose should be prohibited. None other than short, stiff brackets should be used.

All brackets in basements, toilets, hallways and stairways should be fitted with detached keys and all, including those in the cellars, should be equipped with wire protectors.

In cooking classes, where a number of small gas stoves are used, teachers should be cautioned as to the use of matches and pupils instructed as to the proper method of lighting matches, as well as disposition of match ends after lighting gas.

Friction lighters should be used, where possible, in place of matches in class rooms.

Rubber hose should not be used for connections for gas ranges or gas stoves; neither for burners, except for laboratory tables.

All woodwork at or near gas stoves should be carefully protected by stone linings or metal lined with asbestos.

Gas stoves or hot plates should not be placed upon a wood-top table or other similar surface, unprotected by stone or metal, with asbestos beneath same, or other incumbustible materials.

Gas ranges should rest on a base of stone, cement or 26-gauge metal, lined with asbestos ¼ inch thick.

All gas-meters should be provided with platforms or shelves of fire-resisting material.

Combustible material should not be stored under or near gas-meters or electrical meters or switch-boards.

For ordinary structures the standard fire-extinguishing appliance equipment should consist of:

One 3-gal. approved fire extinguisher.

One 5-lb. flat-head axe.

One 6-ft. hook, Fire Department pattern.

Additional fire-extinguishers: On floors where carpentry, chemistry, sewing, etc., are done, and in which combustible material of any kind is stored, one additional extinguisher should be provided, and where such floors cover areas of 10,000 square feet, two additional extinguishers should be provided.

Fire buckets: Two standard fire buckets, 10 quarts capacity, should be placed in each carpentry shop.

Automatic sprinklers should be provided in large storerooms or workshops on first floor or below, and in all chutes, one being placed at top and one at bottom. All supplies should be from house service.

Water connection, with length of small hose attached, should be placed in all furnace-rooms for use about ash-pits, and similar connections should be placed where waste paper or other refuse is burned.

Oil of any kind should not be applied to wood floors.

Kerosene oil should not be used for cleaning purposes alone or combined with any other oil or preparation.

"In the United States we are so prone to consider the rights of the individual that we are apt to overlook the rights of the aggregation of individuals. If laws requiring uniform fire resisting building construction after any fixed date would be exacted and enforced, it would only be a question of time that the benefit would accrue to the community in the way of reduced fire losses, reduced insurance premiums, and reduced expenses for maintaining fire fighting equipment and added security to life and property interests."

Statistics show that in 1907 our preventable fire waste according to European experience amounted to over $366,000,000, or nearly enough to build a Panama canal each year.

Carelessness was found to be the cause of at least 56% of the fires occurring in the city of Boston during a period of twenty-five years.

Mill construction has been designated slow-burning, because, although largely composed of combustible materials, intelligent use and sufficient mass have greatly lessened the chance of the rapid spread of fire, or the probability of serious structural damage before the fire can be brought under control through the equipment of fire protection devices which should always accompany this type of construction. Such equipment includes watchman's service, automatic sprinklers, fire pails, hose, pumps, and hydrants, besides an efficient private fire brigade. It is these safeguards, coupled with the better adaption of all manufacturing or storage buildings to the risks inherent in their occupancy, that have caused the losses in the older factory mutual fire insurance companies to average four cents per hundred dollars annually, as compared with sixty cents in other property (or a ratio of one to fifteen), while the average cost of insurance to the owners of approved factories has been reduced to less than seven cents.

The following notes are excerpts from a Hand Book on Fire Prevention and Protection compiled by Joseph K. Freitag, and from various other sources:

"In Europe they have learned that fire waste emanates in larger part from either criminal indifference or criminal intent, and that to this extent it is preventable through laws which go directly to the root of the evil by holding the individual citizens to a rigid accountability for every act of omission or commission which tends to increase the danger. In all parts of Europe where the Code Napoleon prevails, the law of Voisinage holds the landlord responsible for his negligence to all concerned, tenants or neighbors, and if fire originates from carelessness of tenant, he is held responsible to all concerned, landlord or neighbors. This law places the responsibility where it belongs and works automatically in making everyone interested in having his premises as safe as they can be made by human foresight."

"If our enormous fire losses were unavoidable, speculations as to the improvement of conditions would be idle," but that such property losses are preventable is irrefutably shown by comparing statistics of fire losses in United States and in Europe.

Reports of United States consuls in Europe show that the average per capita loss in six European countries for a period of five years was $0.33, while the fire losses in five of our states during five years was $2.12 per capita, or 6½ times as great. Figures show that at least 27%

of the losses by fire occurring in the country resulted from fires extending beyond the building of origin, while abroad, the percentage of such losses from the extension of fires to other buildings was a fraction of 1%.

Management.—Mr. F. M. Griswold, who, through his connection with insurance interests, has had a wide experience in fire prevention matters, has stated that, whatever the construction of a factory or manufacturing building, or the nature of its accupancy, or the completeness of its fire protection, shop management or "good housekeeping" is the most important basic element in fire prevention, the acceptable practice of which requires the following:

The enforcement of rules which will insure cleanliness throughout the plant as a matter of daily practice, not only as a means by which the possibility of fire may be avoided, but as of profit.

(a) Floor sweepings, greasy papers, oily wiping waste, paint, rags and like material, subject to spontaneous ignition, should be deposited in "Standard" safety cans suitable for their reception, the contents of which should be safely disposed of each night, preferably to be burned under the boiler.

Ashes should be kept only in metal receptacles; should be removed from building each night and not be deposited in contact with combustible structures or material.

(b) Workingmen's clothes and overalls, when not in use, should be kept in ventilated metal closets or lockers not in contact with readily combustible material.

(c) All cumbustible process waste and other refuse should be carefully disposed of by removal from the buildings at the close of each day's work, and be safely deposited in locations not endangering the plant in case of ignition of such refuse.

(d) All volatile and inflammable fluids should be kept in and used from "Standard" safety cans; not in excess of one day's supply of such should be kept inside of building at any time, and all unused portions should be removed to a place of safety outside of the plant at the close of the days work.

(e) Watchman's service should be maintained at all times and the record of service be shown on such mechanical device as will not permit evasion of duty; records should be examined and checked over, filed and dated each day.

The principal auxiliary aids in detecting or extinguishing incipient fires, or in coping with particularly severe fires, or in preventing panic and confusion among employees consist of the following:

1. Automatic Sprinklers.—These should be ranked first among auxiliary aids, because they both detect and extinguish fire.

2. Automatic Fire Alarms, ranked second in importance because of their automatic functions in discovering fire.

3. Other agencies, such as Fire Pails, Extinguishers, etc.; Auxiliary Boxes, Watchman and Watch-clocks, Standpipes, Hose-racks and Roof Nozzles, private Fire Department.

4. Discipline of tenants and up-keep of appliances, to insure instant efficiency, involve:

Fire Drills, and Inspection and Maintenance of Protective Appliances.

Sprinklers have been called "the grestest economic invention of the present generation." Heretofore used only in non-fire-resisting buildings, their use is now gradually extending to a wide range of fire-resisting structures, not so much on account of the protection directly afforded the buildings as in recognition of their great value in controlling incipient fires in the stock and contents. A broad view of fire protection should consider safeguards almost as important as fire-resisting construction per se, as any means which tend to extinguish or limit fire are of incalculable value.

AFTER THE HORRIBLE ASCHE FIRE IN NEW YORK CITY, SUPERINTENDENT STEWART RECOMMENDED:

1. A fire drill and private fire department should be organized among the employees of all factories to prevent panic and extinguish fires. The plan of organization outlined in the recommendations of the National Fire Protection Association should be used as a guide for this purpose.

2. All stairways, or a sufficient number of them, should be located in fireproof shafts having no communication with the building except indirectly by way of an open air balcony or vestibule at each floor. Hose connections attached to standpipes should be located on each

floor. Hose connections attached to standpipes should be located on each floor in the stair towers for public or private fire department use.

3. Stairs, if any inside the building, and elevators, should be enclosed in shafts of masonry and have fire doors at all communications to floors.

4. The provisions ordinarily necessary for fire escape towers might be somewhat modified in buildings equipped with a system of automatic sprinklers installed according to the standards of the National Fire Protection Association.

5. Present buildings with inadequate fire escapes should be provided with automatic sprinklers and smoke proof stair towers, but additional outside fire escapes passing in front of or near windows should be discouraged.

6. Automatic sprinklers should be installed in all buildings to control a fire and thus prevent it from spreading rapidly from floor to floor by way of outside windows. The use of wire-glass in metal frames for all exterior windows would also retard such vertical spread of fire but not so effectively as a complete equipment of automatic sprinklers throughout the building.

A wet-pipe system is considered to give much better protection against fire than the very best dry-pipe system, and for this reason dry-pipe systems should be used only for rooms or buildings which it is impracticable to warm during cold weather.

If an automatic sprinkler fails at time of fire, the neighboring heads will usually check the fire. If a dry-pipe valve fails, every sprinkler becomes useless, and the ruin of the whole building may follow. Furthermore, with a dry system, water does not reach the fire as promptly, on account of the air in the pipes.

FIRE ESCAPES.

Fire escapes may be located either on the interior or exterior of a building, but in either case three requisites are necessary, viz.: Safety, unobstructed outlet and access to the roof.

The best type of interior fire escapes is the so-called Philadelphia vestibule type of tower stairs, which consists of a stairway enclosed in walls of brick or other approved fire-resisting material and isolated from the several floors of the building, except for an exterior balcony at each floor level which forms a means of communication through the open air between the stair towers and the interior of the building.

Exterior fire escapes are generally inefficient, especially when built so that they pass windows, unless the latter have metallic frames and wired glass, if they must be used, they must be in the form of stairs and never in the form of ladders, because they are never used except in case of panic or danger, are at best of light construction, and because of their unsightliness are generally placed in inconspicuous locations rather than where most serviceable, and especially because of their inadequate capacity. If they must be used, they ought to be in the form of "straight runs."

Fire escapes—stairs—should not be steeper than 45 degrees, balconies not less than four feet wide, entrance door to be on floor level, doors or window openings onto or under fire escapes to be metal covered and wired glass.

OUTSIDE HOSE—COTTON RUBBER LINED.

For use on the yard hydrants of the ordinary building, unjacketed cotton rubber-lined hose is recommended, Specify that it be guaranteed "conformable to specifications of Associated Factory Mutual Fire Insurance Companies."

For nine-tenths of the yards the above hose is preferable to the thicker and heavier jacketed hose used by the city fire departments, as it is easier to handle and more quickly dried and more economical for the consumer.

By purchasing only the best, and giving it the small amount of attention suggested, the greatest practicable durability will be assured.

Experience has shown that a good cotton rubber-lined hose, properly cared for, will frequently last ten or even fifteen years.

No hose smaller in diameter than 2⅝ inches should be used. The actual inside diameter of the so-called 2½-inch Underwriter hose is 2⅝ inches.

INSIDE HOSE—UNLINED LINEN.

For fire hose to hang up in dry, warm rooms or stairway towers of textile mills, corridors of office buildings, etc., we recommend unlined linen hose. Specify that it be "guaranteed conformable to the specifications of the Associated Factory Mutual Fire Insurance Companies."

It costs less than half as much as good cotton rubber-lined hose, and if not used will last two or three times as long. Its chief value is for short lines for brief use inside the mill, and it is best on account of its superior lightness, compactness and convenience for use by one man alone, and because there is little or no chance of its becoming stuck together by the ordinary heat of the rooms.

If possible, the stairs and elevators should be separated. Each building should have at least two stairways remote from each other and enclosed in fireproof shafts with fire doors on the several floors. No point to be beyond 90 feet from the stairway.

All stairways should be enclosed in fire resisting walls such as brick or concrete, which should be rigid for the proper mounting of fire doors, and stable to prevent damage on the stairs caused by falling partitions.

If glass must be used in these partitions, it should be wired glass set in cast iron.

Stairways should be fireproof and if marble or slate treads are used, cast iron sub-treads or platforms under the marble or slate should be used.

Experience and tests have shown that for effectiveness, reliability of operation, durability and cost, the tin-clad firedoors with wooden cores are best. The horizontal sliding type takes up the least room and has the simplest closing device, the single swinging door is the next most desirable, and swinging doors in pairs are least desirable. Exit doors should be of the swinging type opening outward, this arrangement being already required by ordinance in several states.

In hospital and other public institutions every consideration of design or construction must be subordinated to that of safety.

Boiler and storage rooms should, however, invariably be cut off from the balance of the building by thorough fire resisting walls, preferably brick or concrete, with as few openings into the rest of the building as possible. These openings should be provided with automatic self-closing doors.

If possible, the floors above these boilers should be of fire resisting construction, and if of wood, the spaces should be filled in solid with hollow tile, concrete, mineral wool, etc.

Many reputable construction companies are willing to install a sprinkler system at their own expense, carry it until the reduced premiums pay for it, and then deliver it free and clear to you.

Manufacturers Mutual Fire Insurance Company reports that for fifteen years, 1897-1912, the risks written amounted to $3,302,812,120, on which the average loss per $100 was $3.52. The annual cost of insurance was $0.0655 per $100.

Acting-President: As Dr. O'Neill will not be present, I have asked Dr. Burlingham to preside over the question box. No questions have been submitted to Dr. Nealley, I understand, but I imagine there may be a few of you who have problems that you may wish to present to Dr. Burlingham. If there is no objection, we will adjourn the meeting and have the question box tonight.

Adjourned at 12:20 p. m.

WEDNESDAY, JUNE 23—EVENING SESSION.

Called to order at 8:20 p. m., by Acting-President Summersgill.

Acting-President: This morning we did not have the discussion on Mr. Hill's paper, which was entitled, "The Hospital Superintendent and the Architect," and I will now call on Mr. Stevens to open the discussion.

Mr. Stevens: I consider this paper a most excellently prepared and delivered paper. Mr. Hill has covered the ground so thoroughly that I hardly know what to say except as commendatory. Just one point might be enlarged upon, because the subject is so broad that it could not have been covered in a paper twice the length, hardly in an entire library. I agree with Mr. Hill that the superintendent should be selected before the institution is started. So many times, the architect is selected before the superintendent, the trustees thinking that they can direct what is wanted, and as a result when the superintendent is selected it is sometimes confusing. One point which perhaps Mr. Hill did not make as clear as I think it should be is that the hospital should be built around the patient; that is, it is to be, of course, considered, that the patient is the account for which the hospital is built and everything should be subordinate to the patient, because that is what the building is built for. The plan should be dominant. So often we see buildings, beautiful architecturally, not arranged properly for the convenience and care of the patient, so that I think the plan should always be considered first in the details of economy of administration, the best care of the patient, the proper orientation, the feeding of the patient, etc.

One thing which was touched upon in the paper was the question of securing enough land for future development. That is a point which I think is so often forgotten when the first conception of the hospital is made. Hospital projectors are not apt to look far enough into the future and the land selected is likely to be too small, only to be found, as the institution develops, that no land is available. So that I would advocate looking forward into the future and planning what may be needed, leaving room for future developments.

The architect, as the writer of the paper suggested, should be able to relieve, to a very large extent, the superintendent. The superintendent is busy and should leave to the architect, and the architect should be capable of relieving the superintendent of many of the details of construction.

The round table, which was suggested, is an excellent idea. I think that we should extend that conference beyond the superintendent and the superintendent of nurses. I should take into conference the chief engineer and the dietitian and even, perhaps, the head nurses. I believe that a Conference with the staff during the preparation of the plans is most important, for it saves a good deal of friction later on.

The paper covers the points so thoroughly that that is all I would offer at this time.

Acting-President: If there is no further discussion of this paper, we will proceed with our program. When we left off, I had intended taking up the question box first. As the other stenographer did not arrive, we felt it necessary to combine both sessions in this one meeting and at the end of this program we will have the round table conference which was to take place at the smaller session, and the question box. The next paper is that of Dr. Andrew R. Warner, Superintendent, Lakeside Hospital, Cleveland, Ohio, on "The Possibilities of Future Development in the Service Rendered by a Hospital to the Community."

THE POSSIBILITIES OF FUTURE DEVELOPMENT IN THE SERVICE RENDERED BY A HOSPITAL TO A COMMUNITY.

By Dr. Andrew R. Warner,
Superintendent Lakeside Hospital, Cleveland, Ohio.

Fundamentally hospitals are one type of institutions created by society for service to society. Their existence implies a need for the service and their future growth depends upon the degree of usefulness that can be developed. Beyond and above a hospital's service to the individual sick in its beds, to the medical profession, to the cause of medical education, and to the growth of human knowledge, stands that hospital's final, resultant, real service to society as the ultimate measure of excellence. It is the whole of which all of the many other functions of a hospital are parts, important, essential, but only parts. There is yet occasionally a hospital performing only the first elementary function of a hospital—the furnishing of bed and board to individual sick; but there are now many at the other end of the scale giving service which is the product of hands skilled in many ways and the work of several professions, at least of the nursing, the medical, the ecclesiastic, and the sociologic. These hospitals can render the greatest service to society: it is therefore these that society will in the end elect to preserve and support.

In a single paper one could not discuss all the possibilities of future development in the service rendered by such hospitals to society: there are too many now clearly in sight and of these but few can be selected.

PREVENTION OF DISEASE AND PUBLIC HEALTH.

The era of prophylactic medicine is no longer a hope: it is come, a reality in fact, though it will develop in degree. The health centers established, the more frequent routine periodic physical examinations, the work of the factory physician and social service department, and the frequent use of the visiting nurse or physician by insurance companies, indicates that individuals and corporations are becoming convinced that it already pays in days of health and productive labor better than its cost. There is now a general recognition that it is better charity to keep a man from the need of a hospital bed than to care for him when in one.

The composition of the average hospital ward is a public disgrace and a reproach. Here are found typhoids because we drink our sewerage, visceral and brain syphilis because doctors, dispensaries or hospitals have been too careless about letting patients slip away half cured, a menace to others and a prospective public burden; here is sometimes tuberculosis, but never chicken-pox because the community calls chicken-pox contagious and isolates it, but not as yet tuberculosis; here are men sick because they worked in a danger of which they knew nothing; here is a long line of men useless from the primary and secondary effects of alcohol. Hospitals see the needlessness, the ridiculousness of it all better than others, and although it often means hard work to raise the money to pay the cost, they generally endure it in a silence and with a degree of inaction that does not indicate patience or any other virtue.

If a factory begins to send to a hospital cases of lead poisoning or other industrial disease to fill the spare beds, there is a sacred duty, a trust, to be fulfilled—not to appeal to the trustees for more beds for these poor sufferers, but to tell the facts, all the facts, to the local authorities, to the state board, and to the public. What the authorities cannot do to force a correction of the faulty working conditions, public opinion can, and it will be done. Then the extra beds will not be needed. It is not always a compliment to a hospital when some factories elect to patronize that hospital and if a hospital's collective conscience and regard for duty can be kept dormant by the prompt payment of ward rates, it is thereby classified if not standardized. The public has long talked about cemeteries as the burying ground for the results of medical incompetence and the public is beginning to talk about the hospital record room as the burying ground for the responsibility for human lives carelessly, needlessly, wrongfully damaged or lost. A policy of silence, inaction, disregard toward industrial carelessness and other causes of needless suffering and death, makes the hospital an accessory to the crime. The working conditions of some manufacturing plants are wrong entirely through ignorance and not with wilful carelessness. But this does not lessen—it increases rather the hospital's responsibility to make the effort to relieve the detrimental working conditions; for the hospital's story told direct to the managers will in such cases promptly bring the desired results.

The preservation of public health in all its forms is a major work for every hospital. No contribution of facts pertaining to public health problems can in any way equal that collected by hospitals. This is due to the fact that the records are written, that both the primary and secondary diagnoses are collected together in the indexes, and that large series are rapidly collected. The poor, the people reached best by hospitals, are affected first and most by community conditions unfavorable to health. The out-patient department by its numbers is extremely sensitive to changing conditions. The diagnoses made in a day or a week are a fairly accurate picture of the state of public health in the locality, a fact just beginning to be put to use. We are the keepers of public health more than we sometimes realize. In these days cities have epidemics of small-pox only when some dispensary misses that first case from the crowded foreign settlement.

Dispensaries will not always be departments or adjuncts of hospitals, "poor relations," as they have been called. The public interest will follow the profession to the newer fields. Although the man with tuberculosis, brass poisoning, or typhoid will continue to get the most careful attention, the keen interest and the higher regard will be placed in the work of preventing others from getting the same troubles. The primary philanthropic institution will then be the one in the closest contact with the people, the dispensaries, and the one which writes daily in its records the danger signals and the forecasts of the health of the community, now so little considered. Financial support always follows interest. Around the dispensary will be grouped the acute wards, the convalescent hospital, the hospital farm, the departments to train the maimed and handicapped back to usefulness, and other departments. Such an institution will be equipped to mend the accident or misfortune in the best way possible at the same time that it is promptly preventing more from the same source.

Sometimes even our routine work and records can be used quite effectively. When the Social Betterment Committee of the Federated Churches of Cleveland decided to attempt to secure the closing of the segregated vice district, the ministers counted the men and boys who visited this district, and asked what the harvest must be. Two hospital superintendents who became interested counted the cases of disease coming to the clinics. We questioned every man as to the source of his infection and were soon able to demonstrate that 40% of the fresh infections with venereal disease was acquired in this small isolated vice district, although only 10% of the prostitutes, street walkers, and other habitually immoral women known to the police, were inmates of this district. We brought the Mayor and Chief of Police of the City to our clinics to show them the constant stream of needless human suffering that came from this district to overwhelm the offenders and the innocent of this and succeeding generations—not to point out the wealth of our clinical material. We opened our hospital records to them that they might realize the aftermath. The result of it all was the addition to the plans of our City Hospital of a pavilion of one hundred and fifty beds for the isolation of the venereal disease together with an increase in the beds now available, and recently, too recently to count the gain, the complete permanent closing of the district by a forceful, sincere Mayor and an efficient Chief of Police, equally determined to rid Cleveland of all traces of commercialized vice. The crowding in our dermatological clinic will, I believe, soon become a little less troublesome.

The fields for service to public health and preventative medicine open to hospitals are as yet mostly possibilities for future development, but the proper use of our records and opportunities already promises to prevent more disease than our beds could possibly relieve with treatment. Incidently the record room work gets results cheaper than the ward. Is the "summum bonum" the medical profession or is it public health?

BROADER FIELD.

The present also reveals to us the beginnings of a recognition of our broader responsibility to a patient. Usefulness is the measure of life and life's happiness. It may be lessened or abolished by disease and thereby bring not only dire misfortune to the individual, but a problem of society. Such a problem begins when full usefulness ends; it is solved only when usefulness is again restored. To hospitals society assigns the solving of these problems when the individual's resources are inadequate. The limits of the hospital field are therefore from the ending of usefulness to the restoration of usefulness. Social service, as we now know it, is but the beginning of the reorganization of hospitals to assume the full responsibility for the assigned problem and a promise of farther development, not a finished product. The hospital social service worker recognizes these broader limits of the hospital field in the daily task of getting someone a job and back to work, to normal life. The interval between the discharge from the hospital after an acute illness and the day the man can return to work is usually—at least a dangerous risk, if not a serious damage to a working man. Supervision of convalescence saves too many chronic conditions, too many over-strains, and too many lives not to eventually become general. Hospitals must make the use of convalescent departments a routine: the longer stay in the wards at high cost can never stand against the far cheaper and better farm life, the open air, the sunshine, and the graded schedule of work in the garden to bring a man back to working condition. This and much more will come when the hospital's work no longer ends when the patient is "able to go home," but when he is "fit to go to work." The responsibility to furnish the most effective and the broadest service cannot now be abrogated by any hospital: it can be ignored only.

RESEARCH AND EDUCATIONAL.

In the last few decades many medical schools have established chairs of Experimental Medicine and provided ample laboratory facilities for borderline work with good and sufficient results. Notwithstanding the work of these university research posts, there has come to hospitals a feeling of direct responsibility to increase the store and use of medical knowledge by actively encouraging the study of problems presented by its patients instead of passively permitting this to be done. Animal experiments done in hospitals and laboratory work to prove and to check the theories, explanations, and observations of the staff are becoming more common. It is in the hospitals that the practical clinical problems actually present themselves, and there is a growing belief that it is in the hospital that most of these will not only be solved for the day by a shrewd guess, or keen logic, but be so proven by animal experiments and other means that the work will reach and be of value to others, and a benefit to posterity.

There is another benefit from the cost of experimental work often, if not always, worth more than the knowledge gained. Hospitals are becoming progressively more and more interested in the training of young medical men for their own future use and for others. Without experimental work they are trained to depend on the say of others; with it they are trained to think and to prove. Surely the latter will produce better men. To the local dwellers a hospital is a building of brick or stone, built to care for the sick; to the world—to society, it is a group of men of a certain caliber and results of a certain worth. It pays to train men right. Lakeside has recently backed this belief by adding five men to the resident staff and equipped a new laboratory, that thoughtful observation, study, and demonstration, or "research work" as it is often called, may be increased among them to the extent of five men's full time. By no means does this make us the leader in this particular; rather, a follower in a line that is content to look to the future for even moderate results. The clinical clerk is another evidence that hospitals are taking an active interest in medical education.

CO-OPERATION AND MUTUAL HELPFULNESS.

The idea of mutual co-öperation between hospitals as it is developing is hopeful and prophetic. The very idea of active competition between hospitals, of a bitterness of feeling, and of any rivalry that is not simply altruistic eagerness to serve better and absolutely free from thought of gain to self, is unreservedly repulsive: it is entirely foreign to the purpose of all endowments, grants, or expressed tenets of purpose of any hospital. The public servant, institutional or individual, who reveals for an instant a selfish aim is instantly discredited. Honor and gratefulness are but the acknowledgment of debt for uncompensated service. The union of hospitals to increase the ultimate service to the community is broadening in scope. New York hospitals united to lessen waste in buying. Philadelphia hospitals united in an effort to increase the individual efficiency of the institutions. The New York dispensaries and the Cleveland hospitals have each united for the primary purpose of increasing the combined contribution of all the local institutions to the public welfare of the community, helping each to fit its work to the others and to the existing needs, eliminating overlapping and wasted energy. Surely we may look forward to the day when all hospitals shall present to society harmonious, united service, adapted with the greatest care and in absolute unselfishness to the needs of the time.

REAL RESULTS.

What are days and weeks spent in a hospital worth to patients and what do the "cured" and the "improved" in the discharge notes of medical and surgical histories mean? Dr. Codman of Boston has been asking these questions for some years. A few hospitals are now really trying to find out by thorough follow-up systems how beneficial the average "cure" proves to be, and to appreciate the later influence and the final effect of particular treatments. We are entering on the stage of the collection of the actual results as fundamental facts. From these there will come comparisons, deductions, lessons learned, and based upon these, future progress in many ways. Known results can be compared with the cost; one method with another, and society will be able to buy its health more intelligently.

To many who have thought about the growth and development of the medical sciences, the shifting of the professional aim from treatment alone to individual prophylaxis, the expansion of this to the community, and who have then realized that this was simply intensified public health work, have reasoned from this conclusion and from the growing recognition that all is for service to society, that in the end the medical profession and all institutions contributing to the preservation of health "must become a function of the state." But society has other professions and other institutions existing to protect and advance itself, and the same principles of greater, broader service pervade many such. All that render good service cannot become "functions of the state" as we now understand that term. There would be nothing to do worth the while outside the state. Such a condition can be only when the state and society become synonyms, when state craft and that science of society are one. This may come, but it will come through the socialization of the state and its elevation to almost perfection in grasping and enacting a wiser public will, not by the extension of political control of the present type to and over the professions and institutions. Active participation by the profession and by hospitals in the solution of public health problems and the acknowledgment that the logical test of excellence is the ultimate value of the service to society will bring no crisis, no conflict with the state. Ideals and service will guarantee respect and position tomorrow just as they do today.

ACTING-PRESIDENT: This paper is now open for discussion. I trust that the discussions will be as short as possible and that those desiring to discuss will announce their names and their places of residence. If there is no discussion on this paper, we will proceed to the next, "Correlation of Hospital Diets," Miss E. Grace McCullough, Dietitian, Peter Bent Brigham Hospital, Boston, Mass.

THE CORRELATION OF HOSPITAL DIETS.

By E. Grace McCullough,
Dietitian, Peter Bent Brigham Hospital, Boston.

My message to you today is by request of your deceased President, Dr. Mann, that I present a practical paper upon hospital diets generally, what is being done at the Peter Bent Brigham Hospital specially, and what may be done to raise the whole question of diets to a higher standard and to meet the requirements along new lines. It is a large order.

It is not within the province of this paper to discuss in detail the different avenues which lead up and through the daily regime for maintaining a satisfied, suitably fed family, other than what may be necessary to demonstrate the relation of part to part or parts to the whole. To obtain the maximum results the dietary department must co-operate with every other department at the points of least resistance. It is assumed that all large hospitals and a majority of smaller ones have an organized, systematized dietary department, wherein should enter up-to-date methods.

There must be a clear comprehension of the various and varied diets of any hospital. Hospitals differ greatly in character. They may be charitable or otherwise or both. They may be general or specialized, chronic or acute, infants or children or all inclusive. It matters not what, but they must be so grouped for a working basis that the results will meet the demands.

Whether in wards, buildings or special institutions the patients are usually apportioned by age as infants, children or adults and subdivided into sex, medical or surgical.

Hospitals exclusively for infants are rare. Infants' wards are usually adjuncts to the children's hospital or are part of the maternity service.

INFANTS.

The feeding of infants, whether they be medical or surgical cases, resolves into the percentage formula as prescribed by the physician,—easily calculated and prepared. To look back ten years, it seems almost impossible that the average interne felt the formulae a bugbear, which any grammar school girl today could readily work out if put in the form of an equation.

This feeding formulæ must take into consideration the age and condition of the infant, the energy quotient, with the nature and severity of the disease. Those who have the care of infants must keep abreast of the times and be able to apply the results of the research which has been done during the past few years along the lines of "deficiency diseases." The emphasis recently placed upon the discovery of vitamines has thrown new light upon certain phases of mal-nutrition. The present activity over the varying split-protein products and the effects of the different cereals usually employed as dilutents, with their relation to the intestinal flora and as methods of control for intestinal infection. The lack of more definite data concerning salts metabolism and the part they play in end-products has been a handicap; certainly in the matter of bone and joint involvement, but the coming year is expected to yield fruit worthy of the great laboratories at work upon these subjects.

There should be in every institution for infants considerable space set apart for the care and preparation of the feedings, one room, preferably two, with walls and floors either tiled or enamelled, with refrigeration and sterilization facilities accessible; as well as equipment for the preparation of the various starch products as ordered. A pure milk supply is unquestioned. The securing of a supply of standard percentage cream is always difficult where purchased, though it be guaranteed. A small electrical separator is the ideal method, and in addition there should be set up one of the new homogenizing machines which produces such an exceedingly fine emulsion, the fat is more easily absorbed.

The whole should be under the surveillance of one who has the knowledge and will faithfully and intelligently carry out orders.

Thus the entire feeding of this class of patients resolves itself into a simple problem which costs money, however, not so much for raw food material as for the space and necessary equipment plus the salary of such a responsible person.

CHILDREN.

In children's hospitals where the ages of the patients range from 2 to 12 years there should be three distinct house or general diets, for all those who need not be upon what are termed "special metabolism diets." These three general diets must be carefully planned, and calculated with direct reference to group ages and to furnish the balance ration for the growing child. Some of the food and a few dishes may be suitable for all which would greatly facilitate the kitchen service. Just here is the stumbling block, more thought must be given to the patients than to the cooks and I grant you it is easier to get patients than cooks.

I said these group diets must be carefully planned and reassert it, there is nothing more dreary than the monotonous daily diet of the average children's ward which consists of mashed potato, boiled rice, ground meat, and the ubiquitous pudding. In all earnestness I ask why are sick children still fed upon rice, when hulled rice is today prohibited by law in one nation and gradually being dropped by another?

Of necessity the character of the food is simple and easy of preparation but by its monotony often loses its value in a lack of that important factor of digestion psychic effect. If more time, more thought and more energy were given to the preparation of the same raw material into a greater variety of pleasing dishes, changing their form and color, the results would be infinitely greater. Food on paper may read calories and all food principles but unless food be eaten and assimilated there is a double waste. The waste in material and the waste in energy to eliminate. There has not been enough consideration given to the matter of pleasing children in the past.

Many of our hospitals feel that serving frozen dishes is the acme of extravagance. Probably it would be if they were all made of cream, but it is possible to produce very delicious ices without any cream. You may call them frozen puddings, frappe, sherbet or what you will, but nothing is more refreshing to a fever tossed patient than one mouthful of some frozen dessert which is the same material chilled instead of heated.

Where have the sponge cakes gone? The little ones that you and I used to love. Do you think the fairies have carried them off, as I heard a nurse tell a wee tot one afternoon. They are harmless. Try to be fairies at home and bring back cakes and cookies to all the youngsters who may eat, that come to your wards.

There should be a diet laboratory connected with every children's hospital where special feeding and some general metabolism results may be obtained. Children have nephritis, diabetes, typhoid fever, tuberculosis and many alimentary disturbances just as do adults. Satisfactory results can only be secured from definite premises. It may be necessary to know the tolerance in one case and to establish an equilibrium in another. Metabolism work ought not to be confined to research laboratories, but should be a part of the treatment in every case, so diagnosed, by applying the same methods. The dietitians in children's hospitals have certainly a broad field for improvement before them. It is possible and necessary that they meet this requirement in exactly the same manner as in dealing with older patients and make all the diets applicable to the individual cases concerned.

ADULTS.

In considering the diets for adult patients there are many more sides to the problem. and greater difficulties. Very ill patients are easier cared for than those who have passed the crisis and entered upon convalescense. Nationality, environment and previous habits are distinct factors. Age, sex and temperament are continually daily trials for those trying to please when totaling the whole, to suit the nature of the disease and its severity.

There have been many radical changes during the past ten years. One diet has passed out, giving place to another and it in turn has been replaced. Diet lists and grouped diets are being eliminated from ward bulletins. The old broth-beef juice—beef tea regime has been abolished. The hospital which formerly issued gallons, serves pints and that is chicken instead of beef. With the clearer understanding of the food value of milk, the daily per capita quantity has fallen (50%) fifty per cent., thereby meeting the high cost of clean milk by the lesser quantity. The usual grouping of patients has not yet been abandoned, but we have hopes. They continue to be house diets, soft solids, liquids and specials, yet looking at them closely, you will find they stand for somewhat different things today. Rarely do the diets mean definite inclusive amounts, as formerly, but rather the character of the food to be served.

In developing a dietary system for the new Peter Bent Brigham Hospital, the effort was to steer as far from the old known ruts as possible. There are no traditions and the policy is subject to change. The general or house diet is more liberal than what is usual, eliminating entirely the work and strain of the average diet kitchen, where extras and tit-bits for the favored few were prepared, to the disgruntlement of the majority. Steaks, chops, poultry at reasonable intervals for all, has resulted in better feeding, greater satisfaction and has not increased the per capita cost. Veal, fresh pork or corned beef never appear on the menus for patients.

The soft solid diet continues to be a diet of care, the amounts of each article as physician orders, but broader in variety and more liberal in quantity. The special diets are so changed in character and method, they have grown into the term of metabolism diets to differentiate from other hospitals. Whenever a hospital has been attached to a research laboratory, special weighed and calculated diets have been necessary for the experiments, it being only used for that series. At the Peter Bent Brigham Hospital the work was begun the other way round, and every patient with doubtful metabolism becomes at once, not the experiment, but a case for treatment by the results of the experiments. At the time of writing 15% of the total patients, or 32% of medical patients, are fed upon the basis of intake and output equilibrium of each particular patient with reference to the character of the disease, the more or less severity plus complications. Food prescriptions are written with the same formality as for the pharmacist, giving date, ward, name, diagnosis, number of feedings, calories, with the amounts of protein, fats, carbohydrates and salts in grains, total fluids when necessary.

These prescriptions are sent to the dietitian, who sees that they are accurately calculated, made up into menus and promptly delivered.

This entails an enormous amount of dependable work and pre-supposes a broad knowledge of the composition of all food materials, their suitability, digestibility and end-products. This means additional work for students in our medical schools, much more than the desultory course in dietetics now given. Above all, there must come from the medical profession the demand for better trained dietitians to carry on this advanced work. There must be the extra training for co-operation. They must have the ability to grasp a diagnosis, then intelligently follow laboratory methods and findings.

PETER BENT BRIGHAM HOSPITAL.

DIET.

Ward .... Date ....
Name ....
Diagnosis ....
Feedings ....
Calories ....

℞

Protein ....grms.
Fats ....grms.
Carbo-hyd. ....grms.
Salts ....grms.
Total Fluids .... c. c.

Signed ....
Physician.

Form of Food Prescription.

The special metabolism diets are prepared in a diet laboratory under the care of an assistant and two nurses who are on their six weeks' dietetic course. The food, according to prescription, calculation and menus, is cooked and placed in small selected containers, packed in heated tin boxes or in ice as the case may be and delivered by a messenger, directly to the nurse in charge who carefully unpacks and serves. Any leftover is weighed and calculated by the junior interne on duty in the ward laboratory. The whole is charted. The menu is sent to the laboratory by nine o'clock the following morning.

In the surgical wards special attention has been given to all thyroid cases and acute glycosuria. Excellent results have also been secured after gastrostomy operations. Patients have gained in weight, which is unusual, and have been able to leave the hospital with added weight in fairly good condition. The average calories of such fluid feeding being nearly 3,000.

The special dieting has been particularly concerned with what are known as the true dietetic diseases, such as nephritis, diabetes phosphoturia, etc., plus several cases of oriental disease. Some research work has been done in chronic nephritis by Dr. Frothingham and Dr. Smillie, the results of which were published in the Archives of Internal Medicine, February, 1915. There are five tests for chronic nephritis used. 1. The finding of albumin and casts. 2. The rise in blood pressure. 3. The phenolsulphonephthalein test. 4. The total blood nitrogen. 5. The ability of the kidney to secrete added salt and urea on a fixed diet. This fifth test called for several carefully calculated diets which resulted in the standardizing of three nephritic diets with varying amounts of protein which are used after diagnosis, as indicated. Dr. Christian, for other findings, planned out what is known as a renal test diet. This is after the order of the diet planned by Dr. Mosenthal of Johns Hopkins Hospital except where Dr. Mosenthal had three feedings, Dr. Christian's calls for a feeding every two hours, each feeding being a different food material and in different quantities. The feces are noted and the urine collected every two hours. This diet requires a preliminary nitrogenous fixation of 3-5 days. The results of this are to be published later.

The diabetic patients are treated after the most recent methods. The starvation method plus alcohol as recommended by Dr. Allen has resulted in getting our patients sugar free in 1 to 2 days instead of the uncertain time which usually varied from 5 to 30 days, it thus being a distinct financial benefit to the hospital as well as benefit to the patient. When the fasting patient has been sugar free from 24 to 48 hours the next step is to begin feeding very cautiously. Any trace of sugar is a signal for fasting a day with or without alcohol. Invariably the first thing given after a fast is carbohydrate. The only food may consist of 200 gms. of vegetables of the 5-6% class. This is gradually increased, watching carefully for any trace of sugar, the purpose being to find out the carbohydrate tolerance and keep the patient free from acidosis. After this carbohydrate period it becomes necessary to secure the protein tolerance. Fat is somewhat less urgently needed except in very weak or emaciated patients and it can be added gradually. "An element of bulk is frequently needed during the starvation days to give a comfortable feeling of fulness and to prevent constipation." Dr. Allen has inaugurated a series of what he terms thrice cooked green vegetables. Nearly all of the starch is thus gotten rid of. The simplest method to thrice boil the vegetables, is to place them in squares of cheese cloth and move them from one container to the other. The temperature of the water is never lowered. Salt and vinegar are added to make them palatable, when serving. They add enormously to the bulk of the diet and can be given after the starvation days are over, being good carriers of fat when the calories need to be increased and fat allowed.

A new method for home continuation work was started in March, 1914, when it became necessary to care for diabetic patients on leaving the hospital. They were advised to return to the Out-door Department weekly and upon request for some idea of what they should eat I suggested to Dr. Christian, our Physician-in-Chief, that a course of simple cooking lessons within the means of household facilities, if given to these patients would add greatly to home treatment. We asked the co-operation of a Technical College, but there did not seem to be any one equal to the situation, so I extracted from my busy hours, time to attend to it personally. Green vegetables, though expensive, were treated in a most careful manner giving them an idea of at least ten dishes to be made of the same food materials, for variety. The cost and economy in left-overs were emphasized and it proved most satisfactory. Though we were granted permission by the committee to fit up a small kitchen in the Out-door Department for this purpose, we thought it advisable to utilize one of the general kitchens to test out its weak points. These classes were attended by both men and women. Some men out of work and taking care of themselves attended the classes and also women who had to cook for their husbands, as well as women who had the disease. This year, owing to my increased duties it was almost impossible for me to carry on the work personally, but we have secured through the Social Service Department a very competent person to take charge of it and have added to the lessons the matter of using the simple test for sugar in the urine, which they can do at home, with Benedict's solution. Whether this will prove as broad in its value as the simple lessons remains to be seen, but it has been estimated, however, that $2,000.00 as fees have been lost to the physicians of the country. Testing urine always meant $3.00 each time.

In typhoid fever the high calory diet of Dr. Coleman seems to be generally used. That is calculating about 40 calories per kilogram of body weight. The mixed diet readily furnishes an amount of energy, but it is not sufficient to establish the nitrogenous equilibrium. The best results are obtained by making the total calories from 4,000 to 5,000 per 100 kilograms. The outside requirement, however, must vary with the individual case and in different stages of the disease. The relative proportion of protein, fat and carbohydrate are largely theoretical, but the best results are obtained by sparing the body protein. To reach this maximum the food is selected with care in regard to the waste products and to prevent excess of any one of the food principles.

We have experimented with the fluid preparations in the effort to make them more palatable and to establish a standard. There are numbers of dishes which can be substituted and thereby do away with the awful monotony of heretofore. Quite a little of the material which enters into the calculations is frozen and served as mid-meals. Our patients leave the hospital after a short convalescence in very good condition, having lost little weight.

(There are here samples of these calculated diets, the division of the total 24 hour allowance into the menus for as many meals as the prescription calls for:)

TEST NEPHRITIC. HIGH PROTEIN DIET.

Food	Amount	Protein grams	Fat grams	Carbohyd. grams	Calories
Apple	50 grams.	.20	.25	7.10	31.45
Dates	10 grams.	.21	.28	7.84	34.72
Milk	400 c. c.	13.20	16.00	20.00	276.80
Cream	40 c. c.	.88	16.00	1.20	152.32
Butter	30 grams.	.30	25.50	. . . . .	230.70
5 Eggs	250 grams.	33.50	26.25	. . . . .	370.25
Steak (tenderloin)	200 grams.	47.00	40.80	. . . . .	555.20
Chicken	100 grams.	21.90	7.40	. . . . .	154.20
Cheese (Amer.)	50 grams.	14.40	17.95	.15	219.75
Farina	150 grams.	2.475	.315	17.175	81.435
Potato	100 grams.	2.50	.10	20.90	94.50
Spinach	100 grams.	2.10	44.10	2.60	55.70
Tomato juice	100 c. c.	. . . . .	. . . . .	. . . . .	. . . . .
Macaroni	100 grams.	3.00	1.50	15.80	88.70
Bread	70 grams.	6.44	.39	15.93	78.27
Cocoa	5 grams.	1.08	1.445	1.885	24.865
Cornstarch	5 grams.	. . . . .	. . . . .	4.50	18.00
Sugar	35 grams.	. . . . .	. . . . .	35.00	140.00
Sherry	20 c. c.	. . . . .	. . . . .	. . . . .	. . . . .
Total		149.185	158.80	171.32	2,711.22

MENU.

ARRANGED FROM ABOVE CALCULATION.

Breakfast 7:30 A. M.

Apple	50 grams.
Farina	150 grams.
*c Dates	10 grams.
2 Eggs in ramequin	100 grams.
Toast	20 grams.
c Butter	5 grams.
Coffee	150 c. c.
Milk	25 c. c.
Cream	10 c. c.
Sugar	10 grams.

10 A. M.

Egg Nog	
1 Egg	50 grams.
Sugar	5 grams.
Milk	100 c. c.
Sherry	20 c. c.

Dinner 12 Noon.

Tomato Bisque	
Milk	100 c. c.
Tomato Juice	100 c. c.
Broiled Steak	200 grams.
Stuffed Potato	100 grams.
c Butter	5 grams.
Bread	20 grams.
c Butter	5 grams.
Cocoa Cornstarch Pudding	
Milk	100 c. c.
1 Egg	50 grams.
Sugar	10 grams.
Cornstarch	5 grams.
Cocoa	5 grams.
Tea	150 c. c.
Cream	20 c. c.
Sugar	5 grams.

3:00 P. M.

Grapejuice	90 c. c.
Water	90 c. c.
Crushed Ice.	

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*10 grams dates or prunes may be used to change the flavor and yield approximately 33. calories; 7.85 grams carbohydrate.

Supper 5:00 P. M.

Sliced Chicken	100 grams.
Spinach	100 grams.
c 1 Hd. cook Egg	50 grams.
Bread	20 grams.
c Butter	5 grams.
Scalloped Macaroni	100 grams.
c Bread Crumbs	10 grams.
Cheese (Am.)	50 grams.
Milk	25 c. c.
Butter	10 grams.
Tea	150 c. c.
Cream	10 c. c.
Sugar	5 grams.

DIABETIC DIET.

Food	Amount	Protein grams	Fat grams	Carbohyd. grams	Calories
Grapefruit	100 grams.	.79	.20	10.09	45.32
Oatmeal	100 grams.	2.80	.50	11.50	61.70
Vegetable (5%)	200 grams.	2.80	2.50	6.83166	61.02664
Bread	30 grams.	2.79	.36	15.81	77.64
Cheese	20 grams.	5.18	6.74	.48	83.30
Meat	250 grams.	59.90	44.65	.....	641.45
3 Eggs	150 grams.	20.10	15.75	.....	222.15
Butter	50 grams.	.50	42.50	.....	384.50
Cream (40%)	160 grams.	3.52	64.00	4.80	609.28
Total		98.38	177.20	49.51166	2,186.36664

MENU.

ARRANGED FROM ABOVE CALCULATION.

Breakfast.

Grapefruit	100 grams.
Oatmeal	100 grams.
Lamb Chops	100 grams.
Coffee c. Cream (20 cc)	150 c. c.

Dinner.

Broth	200 c. c.
Roast Beef	100 grams.
Spinach	100 grams.
Cheese Omelet (2 Eggs; Cheese)	30 grams.
Tea c. Cream (20 cc)	150 c. c.

Supper.

*Club Sandwich
Custard
(1 Egg; Cream)
Cocoa c. Whipped Cream

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*Patients who are accustomed to having Club or Hotel service find a club sandwich the most pleasing for supper. It, of course, calls for a thin slice of toast (and can only be given when sufficient number of carbohydrate grams are ordered to justify the bread), lettuce, a couple of sliced tomatoes, of cucumber, of bacon, hard cooked egg, chicken and mayonnaise dressing, topped with chopped parsley or mint or capers or sour pickles.

PHOSPHATURIA.

Food	Amount	CaO: grams	Protein grams	Fat grams	Carbohyd. grams	Calories
Grapefruit	50 grams.	.015	.395	.10	5.045	22.66
Bacon	50 grams.	.0031	5.250	32.40	.....	312.60
Oatmeal	100 grams.	.130	2.800	.50	11.500	61.70
Chicken	50 grams.	.0075	10.950	3.70	.....	77.10
Roast Beef	75 grams.	.00825	16.725	21.45	.....	259.95
Potato	50 grams.	.008	1.250	.05	10.600	47.25
Dandelion Greens	100 grams.	....	2.400	1.00	4.850	61.00
Pineapple	50 grams.	.010	.200	.15	24.400	21.55
Rice	100 grams.	.012	2.800	.10	10.500	109.70
Squash	100 grams.	.020	.900	.50	47.430	50.10
Bread	90 grams.	.027	8.370	1.08	.....	232.92
Butter	50 grams.	.010	.500	42.50	.....	384.50
Cream	90 c. c.	.126	1.980	36.00	2.700	342.72
Sugar	40 grams.	....	.....	.....	.....	......
Jelly		....	.....	.....	.....	......
Total		.37685	54.52	139.53	167.475	2,143.75

MENU.

ARRANGED FROM ABOVE CALCULATION.

Breakfast.

Grapefruit	50 grams.
Bacon	50 grams.
Oatmeal	100 grams.
Toast	30 grams.

Coffee. Cream. Sugar.

Dinner.

Roast Beef	75 grams.
Browned Potato	50 grams.
Dandelion Greens	100 grams.
Bread. Butter	30 grams.
Pineapple. c Whipped Cream	50 grams.

Tea. Cream. Sugar.

Supper.

Rice c Jelly	100 grams.
Baked Squash	100 grams.
Chicken	50 grams.
*IIIc. Cabbage	
Bread. Butter	30 grams.

Tea. Cream. Sugar.

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*IIIc. Thrice cooked vegetables.

SALT POOR DIET.

Food	Amount	Protein grams	Fat grams	Carbo-hyd. grams	Cl. grams	Salts grams	Cal-ories
Butter	60 grams.	.6	51.0	....	...	...	461.4
3 Eggs	150 grams.	20.1	15.7	....	.15	1.2	221.7
Sugar	35 grams.	....	....	35.0	...	...	140.0
Bread	120 grams.	11.1	1.4	63.2	...	1.2	309.8
Cream	40 c. c.	.9	16.0	1.2	.04	.2	152.4
Orange	50 grams.	.4	.1	5.8	.005	.25	25.7
Potato	100 grams.	2.5	.1	20.9	.03	1.0	94.5
Oatmeal	200 grams.	5.6	1.0	23.0	.07	1.4	123.4
Cauliflower	100 grams.	1.8	.5	4.7	.05	.7	30.5
Tomatoes	100 grams.	1.2	.2	4.0	.03	.6	22.6
Halibut	100 grams.	18.6	5.2	....	...	1.00	121.2
Chicken	50 grams.	10.95	3.7	....	.03	.55	77.1
Peaches (canned)	100 grams.	.7	.1	10.8	.01	.3	46.9
Total		87.65	111.0	188.6	.895	11.2	2,104.0

MENU.

*ARRANGED FROM ABOVE CALCULATION.

Breakfast 7:30 A. M.

Orange	50 grams.
Oatmeal	200 grams.
2 Eggs	100 grams.
Toast	40 grams.
Coffee	150 c. c.
Cream	10 c. c.
Sugar	10 grams.
Milk	25 c. c.

10:00 A. M.

Milk	150 c. c.

Dinner 12 Noon.

Milk Soup (Celery flavor)	100 c. c.
Halibut	100 grams.
Potato (stuffed)	100 grams.
Scalloped Tomatoes	100 grams.
Bread	40 grams.
Butter	
Frozen Custard	
Tea	150 c. c.
Cream	20 c. c.
Sugar	5 grams.
1 Egg.	

Supper 5:00 P. M.

Sliced Chicken	50 grams.
Cauliflower	100 grams.
Bread	40 grams.
Butter.	
Peaches	100 grams.
Tea	150 c.c.
Cream	10 c.c.
Sugar	10 grams.
Milk	25 c. c.

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*All food prepared without Na Cl.

The last of my message, the question what can be done to bring the whole subject of hospital diets to a higher standard and to meet the new requirements, is the most difficult of all. It is comparatively easy to look over the field and see what is being done, easier still to tell of that with which one is vitally interested and doing, quite another thing to outline directions for those who have not been required to meet the practical side of such feeding. Dr. Mann certainly saw the question in its greatest significance, a vision as it were. The new requirements and different standards are not to be confined to the larger hospitals, but are here for all and will eventually reach every small hospital throughout the country. Why? Graduate students and internes from the hospitals, feeding along fixed and definite methods, will go out as residents and visiting doctors to the small ones, meet the same diseases and similar conditions, will refuse to work blindly and will demand something not only from the hospital but from the nurses in private practice, who must be equal to such emergencies.

Technical schools who prepare dietitians are awake to the situation as evidenced in a Questionnaire sent out last autumn. Dietitians already employed in and about Boston realize their shortcomings and have started a round-table for a study of this new work. The outcome of the first meeting was a request to the Harvard Medical School for admission to work. Women will be admitted to certain courses of lectures and laboratories during the summer schools and a series of dietetic conferences are being arranged for next winter, open to both men and women.

If the doctors call for it and the dietitians are ready, it should be a very simple matter to equip a diet laboratory, of necessity, the utensils the simplest possible, diet scales, selected containers, etc. Each hospital meeting the problems of delivery and serving in accordance with its general routine.

One of the questions which has been received for the Dietary Question Box is apropos, and may as well be considered here, instead of the separate session. "How can a small hospital unable to afford a dietitian, be able to take care of special dieting as asked to do?" My answer is, be willing to pay $50 to $100 to an expert dietitian, just as is required for auditor or engineer, who will work out for you a series of diets with possible varying amounts of fats, carbohydrates, protein and salts. Turn these calculations over and over into menus and place them in a card catalogue. Then send one of your brightest nurses for a dozen lessons in the preparation of the food so selected, and learn by doing it, in your own hospital.

Briefly summarizing from the foregoing and general impressions, I find: I. The whole question of diets unsettled, or rather, in a state of evolution. The older hospitals hug their traditions, the later and newer ones are viewed with suspicion, as not fully tried and may be found wanting. II. That too much stress has been placed upon the difficulties which seemingly stand in the way, as expensive equipment and material, of finding the proper person to launch such innovations, and the uncertainty of the medical men themselves. III. That the co-operation of every department, the superintendent, the entire nursing staff, physicians and their assistants are essential for the smooth running of such detailed work. IV. The keynote of ultimate success in the matter of metabolism diets, is a wider knowledge of the benefits to be derived.

DISCUSSION.

Dr. Andrew R. Warner, Cleveland: This is a subject in which I am much interested, because less than a year ago we employed a dietitian for the express purpose of doing this kind of work, and it has worked out very successfully. In diabetes, it is the only addition to our treatment that has been put in in ten years that I have been around the hospital that produces results that I could see. I can see the improvement in our treatment of diabetes cases on the diets, and I believe I can in some others. There is one question that I would like to ask. We have no trouble with the feeding after the patient has been on a measured diet and after the patient has realized what that has meant to him, the patient gets interested in knowing a little, at least, about the metabolic equilibrium and gets a little interested in finding how easily the doctors will detect a little excess on the patient's part; we have no trouble then. I would like to ask Miss McCullough if anything has been worked out to help manage those patients in the first part of the attempt to feed by prescription. Sometimes, they do not like the prescription and it is not always easy at first to convince them that that particular prescribed diet is just the one that they should have.

Miss McCullough: I think the manner to settle that is to have the dietitian go around and visit those patients and find out the idiosyncrasies and, if possible, meet them. Tastes differ and food differs, and I very often go around the wards and if I find a thing is not acceptable I immediately change it. It is very easily done. The only things that you have to consider are the sex, the nationality, and previous environment; they all work together; and the visiting has a great deal to do with these special cases.

WHAT SHOULD HOSPITAL DIETITIANS AND DIETITIAN HOUSEKEEPERS BE TAUGHT AND HOW TRAINED.

By Miss Laura E. Coleman,
Superintendent, Buffalo Homeopathic Hospital,
Buffalo, N. Y.

The demand of the present hospital world is for standardization—standard nomenclature, standard records, standard accounting, standard equipment, standard education for nurses, standard ideals. Is not this great body of hospital superintendents and trustees assembled for but one purpose—the standardization of hospitals in every department, by interchange of thought and plans of work, each giving to the other the best of experience and result in their special field? Why should there not, therefore, be a standard for hospital dietitians?

Within the past twenty years a great change has come over the educational side of hospital work. The length of a nurse's probation has been increased from one or two months to three or six months; her time of training from two to three and in some schools even to four years. The standard has been raised slowly but persistently. The nurse-in-training must have had one year at high school, or, better still, she must have graduated from high school. Trained teachers have, in all schools that can afford them, replaced the old time graduate-nurse teacher, who taught what she knew, and taught it well, too, but who often had no special training in the proper method of imparting that knowledge to others.

Trained dietitians are filling the place made for them by the recent attitude taken by physicians toward food and its effect upon the human body. Fifteen years ago little was heard, even in our best managed hospitals, about food-values, calories, carbohydrates, etc. and a good steward, with a chef and his staff, supplemented by the work of the nurses-in-training on the ward floors, was considered sufficient. An occasional staff physician gave special attention to his patient's food, but with nothing of the definiteness of the present day, when even the smallest hospital has to meet this demand for every variety of special diet.

All nurses-in-training had, even twenty years ago, cooking lessons, in which beef-juice, custards, jellies, toasts, liquid diets and gruels were the predominating features.

Today, a pupil nurse is taught, in a course of from ten weeks to three months, the preparation, constituents and caloric value of foods for patients and hospital household, with the proper way to measure and serve them. Before she leaves the dietary department, she learns, or should learn, to prepare a well-balanced diet-for any patient—salt-free, diabetic, fat-free, etc., and if the dietitian is the woman for the position; the young nurse will also learn the cost and quality of foods, relation of supply and demand, and, not least of all, when entrusted to assist with the checking of this, the heaviest expense-sheet of a hospital, she will learn how to so care for and dispense these foods that each shall reach its proper destination suitably prepared, and so palatable that there will be little waste because they "did not like the food," and absolutely no waste from carelessness in dispensing.

Intelligent nurses-in-training require intelligent, well-trained teachers; and this, for one thing, the dietitian must be.

In a thirty to sixty bed hospital the question of "How and what shall patients, officers, internes, nurses, and, last, but surely not least, our faithful domestics be fed," is just as important as the same question in a hospital of one thousand beds. The same problems of feeding patients in small hospitals present themselves, as in large ones. One patient taken into any hospital deserving the name, is as worthy of careful feeding as are one hundred such patients.

Many thirty to forty bed hospitals do not have a trained dietitian, but someone must do the work intelligently, and it is upon the already overworked superintendent of the small institution that this grave responsibility rests. Armed with her long, or short training in hospital dietetics, she grapples with the question, and grapples intelligently in most cases—for what she has forgotten, or perhaps never knew, of calories and food-values, she overcomes by study and preparation

—her mind being trained to meet just such extra demands. Then comes the luxury of a dietitian-housekeeper, for in the smaller hospitals, usually because of economy in salaries, the positions are combined. Besides, there would be insufficient work in a small hospital, in either department, to keep a woman, mentally active, contented with one position alone.

With a trained mind, such as a dietitian should have, and with the executive ability a hospital dietitian must have, she can readily do any hospital housekeeping by an additional short course in laundry-management; for this, of course, is the crucial point in hospital housekeeping. With the splendid training she will have had in asepsis and absolute cleanliness, in her general domestic science course as dietitian, and with some knowledge of laundry work—counting that she has ability to manage people—the housekeeping will be very easy, so on that side of the work I shall touch but lightly.

There is but one dietitian for any hospital, large or small, and that is the **trained dietitian.**

What shall she be taught? She shall be taught dietetics in all its branches—foods, quantity, quality, cost, value to patient, scientific distribution under a physician's orders; everything, in fact, that affects the well-being of a patient or household in the matter of proper feeding. This course of training should not be less than two years, and, if any academic work is attached, it should, as in several colleges and schools of domestic science, reach to four years. Surely two years, however, is little enough for anyone engaging in this, so important a branch of hospital work, to give to her training. The physician gives five to eight years to his training; the trained nurse gives three years of arduous, continuous labor to her work, and why should the hospital dietitian, who can undo all the good work of the physician, by badly prepared foods, give so much less, as is sometimes the case?

In a letter to me regarding this paper, the writer stated that one superintendent had said that the dietitians sent him by a domestic science school, were so very young and impractical, that, what with a training school of young women, it was but one more responsibility, and hereafter he would employ only mature, practical dietitians.

I sympathize with him, as in the first hospital of which

I had charge, a small hospital of thirty beds, I came to the same conclusion. From two of the best training schools, I tried dietitians, who, of course, took the position of dietitian-housekeeper. They could talk most intelligently and scientifically of food-values; could arrange and display all kinds of desserts and salads, knew to a degree the caloric value of foods theoretically, but lacked judgment—judgment as to quantity for thirty patients, nurses and hospital household—judgment as to care of and ordering of food-supplies. A vegetable garden was to them an untried field. They counted vegetables only in bushels and baskets, or bunches, as they had seen them in the domestic science schools. They were excellent theorists, but their extreme youth and total lack of practical experience was very discouraging.

I then decided that the domestic science training-schools were to blame entirely, for turning out, and recommending to hospitals needing dietitians, an unfinished product, to complete her training at the expense of the hospital; but I now believe that a word of our needs to those schools would have given them an opportunity to help solve the problem.

Perhaps the lack of hospital ethics which they displayed, was not the least trying part of their failure to fill the situation. They had been taught no sense of responsibility to time. Fifteen minutes earlier or fifteen minutes later carried to them no grave responsibility.

Like the superintendent of whom I have spoken, I then decided that a trained dietitian was not for small institutions, and engaged a practical dietitian-housekeeper of mature years and judgment—one who could utilize the asparagus and other vegetables from our own garden and could preserve or can fruits purchased in quantities when such fruits were seasonable; in fact, one who, except for the fact that she knew nothing of calories and food-values, gave our patients well-cooked porridge, delectable gruels, perfectly-broiled steaks, and such vegetables it is a pleasure to remember them. She was also an ideal housekeeper. The special diets, however, had to be arranged and planned by the superintendent of nurses. The nurses-in-training took their practical work in housekeeping with the dietitian-housekeeper and were sent to Miss Fannie Farmer for their cooking lessons and special dietary work.

For a small hospital this did solve the problem, but from broader experience I have quite changed my mind. I find that to administer a hospital of 150 beds, or five times the original unit, there must be a housekeeper and a dietitian, and that dietitian must be trained and well-trained.

Where should she be trained? I believe hospital dietitians should be trained in some one of the many perfectly equipped domestic science schools or colleges, for not less than two years, and that for at least six months, this training should be supplemented by a practical course in hospital dietetics in some one of the many good hospitals of this country. For at least one month of this time it would be well if she could be given entire charge of the department.

The demand always creates the supply. If the members of this Association would appeal to the domestic science schools of the country for this extension course for would-be-hospital-dietitians, assuring them of co-operation in affording their qualified pupils an opportunity for this course of practical work, I believe they would be only too glad to give it.

As in our training school for nurses we select, from a class of fifteen or twenty, two or three, or maybe but one, who will make a good executive, and add her to our junior executive force, for practical experience in hospital work, so I believe these domestic science schools might select the three or four pupils from each class, who show signs of executive ability—mature pupils with tactful, well-balanced minds, wishing to qualify for hospital work, and recommend them for this Hospital Extension Course. If this were done, I am convinced that hospitals, both large and small, would fill dietetic vacancies with less waste of energy and efficiency.

In the hospital of which I have charge at present, we have tried this plan. Our present dietitian was trained for two years in a domestic science school which already sends out its pupils to one of the large hospitals for hospital experience. In addition to this, she remained one year as junior dietitian in the hospital giving the practical course. She controls her kitchen force, selects and cares for the food-supplies, is responsible for all foods, teaches the nurses theory, and two, who are with her continuously, have their experience in applied dietetics. This she does in a business-like manner. Of course, in a hospital of 150 beds, she does not do the housekeeping, but were the same woman in a hospital of 50 beds, she would manage the entire domestic force, administer the housekeeping, and, with a short course in the one trying spot in housekeeping—the laundry—would do it easily. It does not seem to me that this would be impracticable if the domestic science schools would recommend for this extension course only those showing the proper qualifications for hospital work.

I have written several of the domestic science schools regarding a special hospital course in dietetics, and find that some of them already have a limited course, and that the schools themselves are giving thought to this subject. I quote from one school who says they give a normal course with dietetics, and a housekeeping course with dietetics. "But," says the director of the domestic science school, "I think a combination of both courses would be best for a hospital dietitian." "And,"she continues, "I think graduates of such courses as ours are not prepared for independent dietetic work in hospitals, because of their ignorance of hospital discipline and conditions. This is probably at the back of the friction we so frequently hear of, between hospital superintendents and dietitians. Probably the best preparation for a dietitian would be hospital training and experience, followed by a good normal or housekeeper's course in home economics. Failing this, the next best thing is a good course in home economics, followed by pupil-dietitian or apprentice work in good hospitals.

A satisfactory course would, I think, be easy of arrangement.

It is my experience that as yet we have no standards for hospital dietitians. Each hospital is a law unto itself with regard to the work a dietitian is expected to do. It may range from all the buying and housekeeping for the hospital to a mere matter of preparing and sending up private patients' trays. If your hospital association will discuss this, and point out the wisdom of hospitals' furnishing training schools with a clear outline of the duties demanded, it will help the cause of dietitian-training materially."

Another director of dietetics says: "Occasionally one of our regular seniors wants to go into hospital work, and we invariably advise such a student to take training as a student-dietitian. We feel very strongly that we cannot give, under collegiate conditions, anything which approximates the broader training for hospital work."

Teachers' College, Columbia University, says, in reply to the question as to feasibility of a practical hospital course for hospital dietitians: "Such a course of training in a hospital is not only practical, but highly desirable, and with suitable co-operation from the hospitals could easily be arranged."

It would seem to me, therefore, from my own personal experience, and from the data I have collected, that qualified hospitals have but to offer this extension course to the domestic science schools, for their would-be hospital dietitians, and the problem is solved.

DISCUSSION.

Acting-President: Is Mrs. Helen Moore, of Detroit, present? Miss Barrett, will you kindly open the discussion of this paper.

Miss Barrett: I can only speak from personal experience. In the hospital where I have charge, in Grand Rapids, we have no trouble in regard to the dietitian. I have been in charge twenty years and we have had three dietitians in that time. In each case, the dietitian has been a trained nurse, and this arrangement has proved very satisfactory; but, of course, it is a good deal to ask of a nurse to take a three-years' course in a training school and then afterwards be obliged to take a domestic science course for a year or two. I think Miss Coleman's idea of having young dietitians have an opportunity to go into a hospital after they graduate and obtaining some practical experience would be an ideal arrangement. Of course, our results have been so satisfactory that I can only speak for the trained nurse dietitian.

Acting-President: Is Miss Weller, of Tacoma, present tonight? The paper is open to discussion.

Miss Lucia Jaquith: I would like to say just a few words about this. In our hospital, we have a very good dietitian, a trained dietitian, and we take regularly pupil dietitians for three-months' periods. We do not pay them at all, but they come and work under our dietitian and get a little expert experience. I think that a three-months' period is a pretty short while, and if it could be made a little longer it would be a great deal better, but we are overwhelmed with applicants for that practical work, and any one who is willing or could make pupil dietitians useful in that way will, I am sure, get all they wish.

Acting-President: I would like to call on Miss McCullough for a few words and before she responds I would like Miss McCullough to tell me the present status of the training of dietitians in regard to theory—that is, the chemical side of it. We all know that foodstuffs have a certain percentage of carbohydrates, fats, proteids; we all know that the availibility of those different compounds is not thoroughly understood by dietitians that we come in contact with. Are the present schools for dietitians teaching their pupils the availibility of these compounds in the prepared foods?

Miss McCullough: That is a rather difficult thing to answer. I have been training for the last ten years pupil dietitians and I find it the most thankless thing that I do. To begin with, the hospitals are not providing for this, it is an extra tax on a dietitian who is already overworked. Then we have to go it blindly, because we take them recommended by the hospitals and schools and they come prepared for three or four months, as the case may be, and they are absolutely no use to the hospital. It takes one month for them to learn their way around. All that time, we are training them and teaching them and giving them some idea of their duties, and the dietitian herself is responsible when they come in for their ethical conduct in the hospital. We provide them room and board and they are no use, so far as I can see, to the hospital. If we take them from a philanthropic point of view, very well, but it seems to me that there ought to be some compensation to the hospital and to the dietitian for finishing the training work of the college. I feel that very strongly. We have about four every year and we overlap the last month. It has been a problem right straight along. On this question, when the dietitians came together last year, we were all agreed that we did not like to take these pupil dietitians, that we felt it was a burden on us in the first place, and that, in the second place, it did the hospital no good.

As to the second point, how to take care of the availibility of the fats, proteids and carbohydrates. Well, as far as we know today, all carbohydrates are interchangeable, and all proteids are interchangeable, and only a few of the fats are not interchangeable, so that we have discontinued the primary using of calories. The calories are simply the secondary consideration. The equilibrium of the fats, proteids and carbohydrates in any diet is first to be considered, and then we raise, we pad the diet with fat whenever it is necessary to do it. I have some of my diets calculated here, if any one cares to see them.

Acting-President: I am afraid you misinterpreted my question. My question was meant to mean that certain foodstuffs, take peas, for instance, which are very high in proteid, have very much less proteid available for food than the amount which the chemical analysis shows it to have.

Miss McCullough: Well, that has to be taken into consideration, because the vegetable proteid is very much more difficult of assimilation than the animal proteid, and that is always calculated.

Mr. F. S. Bunn: I would like to ask Miss McCullough a question. Will she tell us how to get hospital staffs to keep pace with a well-regulated dietetic department?

Miss McCullough: That, I think, is a question for the chief of staff. It goes back to the chief of staff. It is for the chief of staff to demand that work. We have no trouble. Dr. Christian, of the Chair of Medicine, at Harvard, is our chief of staff, and he demands it of our internes and we receive what we demand. I have no trouble with that.

Miss Barrett: We also have no trouble with that question. Our dietitian feeds all the patients on the diagnosis of the case—

diabetic, typhoid, or what not—we turn the case over to her for diet.

Dr. Bachmeyer: I might say that our hospital has gone through, as our President very well knows, a rather strenuous campaign. We know the time when the same articles of food were sent to the wards every day, and every week, and every month for a number of years, to every one. Within the last year, we secured a supervisor in the kitchen, who had served about ten years in the dining car of one of our large railroads, and he rearranged the diets so that we were serving a diet that should care for all, at least, and it was being changed every day, but costs went up, of course. Now, we have secured—I have had a telegram since I came west—a dietitian who is a college-trained dietitian and has had three or four years' hospital experience; she has reported and is at work. We have also had a strenuous campaign in securing the people that we want to take charge of other departments. We have had a hard time to get the proper superintendent of nurses; we finally secured her. We had a hard time to get the proper woman for housekeeper; we got a woman who has been in charge of one of Columbia's dormitories and who is a graduate of the college. We wanted somebody to take care of our laundry; we finally secured a woman who is a graduate of Columbia and who has had a general laundry training, who has been in charge of hospital laundries, public laundries, etc.

We have been endeavoring now for some time to link up the hospital with the University of Cincinnati, using the hospital for the field of domestic education. In the University of Cincinnati, we have an engineering department which gives a degree of engineering after six years, during which time the student spends each alternating two weeks in the shops and the other two weeks in the college. The idea was to work out something of that kind in the home economics department. The City did not take it that way; they did not think that the hospital ought to be used as a school for the university. There is considerable opposition towards the university's and the hospital's affiliation. We affiliated with our college of embalming in the city, and we wanted to affiliate the nursing school and they turned us down. However, we have all of the men in the university who give instruction to the nurses. Now, we want the hospital to reciprocate and give them work for their students in economics. We are gradually getting there. Just before I left, I put ten women to work as waitresses in our nurses' home, who will spend their entire summer as waitresses in the nurses' home; these women are students in the home economics department at the university. Four or five have been put to work as laundresses, and just as soon as we have this dietetic department established, we shall probably put some to work there as domestics or as kitchen assistants. If you wish to call them that, and gradually, as they obtain the hospital spirit and learn hospital ethics, we will put them in as pupil dietitians in the same way.

REPORT OF COMMITTEE ON HOSPITAL FINANCE AND COST ACCOUNTING.

By Miss Lucia L. Jaquith,
Superintendent, Memorial Hospital, Worcester, Mass.

When Dr. Mann asked me to make the report on Hospital Finance and Cost Accounting I confessed to being appalled at the seriousness of the problem. After considering carefully the very comprehensive and efficient reports made on the subject at previous meetings of the Association, however, and talking with various people interested in accounting for hospitals, I felt better.

The subject has been painstakingly covered by able, professional people—there is practically nothing new to add. To go into it all again in detail would but waste the time of those who already have cost accounting systems established.

I shall, therefore, confine myself to the encouragement of the smaller hospitals that, for lack of funds to pay an accounting firm to start a system for them, or for other reasons, have not yet undertaken such accounting.

Cost accounting sounds formidable to the uninitiated—but it improves on acquaintance and I do not believe any hospital, however small, should be without it in some simple form. It is merely such an arrangement of accounts as will enable the superintendent and trustees to determine with sufficient accuracy the cost of the patient-day in the various departments, or wards. This cost is based on actual consumption of food, supplies, drugs, etc., plus a certain per cent. of the overhead charges, such as heat, light, water, insurance—in fact, all hospital expenses not appearing as articles or goods issued by requisition of head nurses or other heads of dedepartments.

The cost of a patient-day was formerly arrived at in crude ways by the various hospitals. I know one where it was determined by dividing the sum of bills paid by the treasurer during the year by the number of patient-days for the year—no account being taken of the fact that considerable quantities of the goods purchased were still in stock—a proceeding so absurd that one must suspect we deserved that "mild contempt" with which business men formerly looked upon our business operations. As these same business men are the chief source of our endowment we cannot afford not to merit their respect and approval in a business way as well as professionally.

A cost accounting system is not a panacea for all hospital financial troubles. If the endowment is small and much free work done, the deficit will still be there, but it does enable us, when asking business men and women to make up our deficit, to readily show them that it is not the result of careless business, but represents actual work done for the poor in their community. This is what they want to know—that their money is being placed in the hands of good stewards and will be made to go as far as possible in mitigating the sufferings of those less fortunate than themselves.

Your cost accounting system will keep you in close touch with all your departments—it is as indispensible as the house telephones. If it does not actually save money for you it shows you where your money is going. It is a constant reminder to the heads of the departments and results in greater care in the consumption of supplies— avenues of waste are looked after more closely, as each head is anxious from month to month at least to live up to his previous record, if not to beat it.

As evidence that the efforts of the American Hospital Association along these lines have not been wasted, let me recall to your mind the statement made by the President of last year in his address: "I find, on comparing prices of 1913 with those of 1906, the following percentage of increases: meats, 48 per cent.; poultry, 21 per cent.; butter, 38 per cent.; milk, 48 per cent.; cream, 45 per cent.; absorbent gauze, 22 per cent., and coffee, 42 per cent. In the face of these facts, I ask, can anyone successfully maintain that we are not doing much more for our patients and for the community than we were a decade ago, or that we are not paying greatly increased prices? To complete our case, let us compare the per capita costs of ten years ago with those of today. In 1903 the average daily per capita cost of 14 of the representative hospitals of the country was $2.14, as compared with $2.47 in 1913. This is an increase of less than 16 per cent and is very much less than the average percentage of increase in the cost of everything which is comprised within the range of hospital business. I think contributors to hospitals have reason to be pleased with the results which have been obtained with their money in recent years."

There can be no question but that the care of patients has increased in efficiency also during those years, and that we can reasonably claim the good showing to be due to better methods of accounting and thus better control of the consumption of supplies.

This last is the determining factor in our operations—to so control the issuance and use of supplies that we may feel that every dollar of our money is showing a full equivalent in work accomplished. We must also be sure, of course, that we purchase as economically as possible. This does not mean at the lowest price, but at the lowest price for standard articles. In connection with this I want to say that in the hospital where I serve, a hospital of 150 beds, we have derived great educational, as well as financial, benefit from joining the Hospital Bureau of Standards and Supplies, conducted in New York City, as most of you doubtless know. The monthly fee of $16 in round numbers, paid for our membership, is as good an investment as we have ever made. The membership fees are graded to suit the size of the hospital members and is well worth consideration.

In our hospital we operate a cost accounting system devised for us by Marwick, Mitchell, Peat & Co., of New York. This was a good beginning, though it has been altered since somewhat by ourselves and by Mr. Harry Lucier, of Cooley & Marvin Co., of Boston, who audits for us at stated intervals.

I shall not attempt to explain cost accounting in detail, but I have prepared a scrap book of the forms used in our system which explains the use of each form and its relation to other forms. I will leave this with the exhibits and shall be glad to talk it over with any member interested, as also will our purchasing agent, Mrs. M. H. Stowell, who is present with me at the meeting.

ACTING-PRESIDENT: Having heard this report, what is your wish in regard to its disposition?

SECRETARY PRO TEM.: I move that this report be accepted.

Seconded. Approved.

MODERN HOSPITAL ILLUMINATION.

By David Crownfield, Esq.,
Of Pettingill-Andrews Co., Boston, Mass.

The artificial illumination of a hospital is probably as complex a problem as may be presented for solution to those to whom the handling of such matters is a matter of daily practice.

When I promised the late Dr. Mann that I would prepare a paper on the subject for delivery at this Convention, I had, it is true, some idea of the almost limitlessness of it, but I did not, perhaps, realize fully how limited was the time that could be assigned to so far reaching a subject in a convention where so many subjects are legitimately pressing for presentation.

The interplay of physics, physiology, psychology and last but not least, of economics, is constant. The presentation of any one of these aspects of the problem is a subject in itself. The field of research is as yet almost untouched; of data on the subject there is almost none whatever; and consultation with those using artificial light in hospitals often produces diametrically opposite expressions of opinion on the subject of what they consider good lighting in a hospital, or in some of its highly specialized parts.

On the building of a new hospital a recent article has this to say:

"In considering material and equipment for a new building, emphasis should be laid upon the fact that the use of cheap materials and equipment involves always high maintenance cost and often irremediable dissatisfaction. Extreme care should be exercised that only those materials should be used which will exactly fill all requirements and prove durable. This should apply to every detail of the building and its equipment. Better sacrifice in amount than in quality."

Of all the factors entering into the construction and equipment of a modern hospital, to none are these words more applicable than to the artificial lighting equipment installed in the building.

It is probable that in no class of building extant, in the last two decades, has **the relation of the architectural members,** such as floors, walls, ceilings, trim, etc., to the use of the building in which they are placed, undergone so great a change as in the modern hospital building, where it has been built along advanced modern lines. It has been a battle between the right angle and the quarter circle, in which the latter has won out. This tendency has only recently begun to show itself in lighting fixtures, and is one of the points that should be looked for in the selection of a modern lighting equipment. Together with all other things, the lighting equipment should show fitness for the place in which it is to be used.

INAPPROPRIATENESS IN FIXTURES.

In a recently completed hospital, the fixtures installed in some of the main rooms were square in section throughout their various parts or members, and these fixtures were fitted with shades with V-shaped indentations on their surface. The fixtures and shades were wholly inappropriate for the building in which they were placed.

In another building, finished within a year, the writer was assured that modern, up-to-date lighting fixtures had been selected. On inspection these were found to be ordinary fixtures, suitable in part for a private house, or in some cases for an office building. They bore no relation to and possessed no fitness whatever for the otherwise highly specialized building in which they were placed; and this structure was supposed to be the last word in a building of its type.

In quite a number of recent hospital installations, open top inverted bowls have been installed. No more facile method could possibly be devised for the collection of dust when the fixture is not in use, or for the dissemination of dust, or germ laden dust, by ascending hot air currents, when the fixture is lighted. A flat glass cover over the bowl is not quite, but almost as bad. It may be taken as an axiom that no suspended bowl either of glass or any other material, or any shade of any kind whatsoever, with an open top towards the ceiling, should ever be used in a hospital, as it is a direct contravention of all those principles towards which we should constantly aim.

The principal enemies of a good lighting system are the cost-per-cubic foot and the cost-per-bed methods of computing the cost of a hospital. The principal factors to be considered in our problem are, efficiency vs. economy and fitness vs. economy.

And while economy has always to be considered in any undertaking, it should never be permitted to dominate the selection of lighting fixtures any more than it would be permitted to qualify the judgment of a physician or surgeon in the selection of other instruments he uses in the practice of his profession. As a hospital is supposedly a concentration at one point of all those things that make for the saving of human life it goes without argument that the lighting fixtures should have not only fitness for the building, but should also be peculiarly fitted for the particular spaces in which they are used.

FITNESS VS. ECONOMY.

Economy in lighting fixtures can best be achieved through standardization and repetition, but these are primarily permissible only in the structural parts of the fixtures and in the repetition of these structural parts throughout the various types of fixtures required for different needs. The constant repetition of a few individual types only throughout the building or group of buildings will give very poor results; such a lighting fixture layout would be thoroughly lacking in fitness to accomplish the varied purposes of the installation.

GROUPING OF ROOMS AND FIXTURES.

The primary step in the artificial illumination of a hospital is the division of the rooms into groups, including within each group such rooms as will permit of similarity of treatment in the lighting fixture and in the disposition of the light. We may further subdivide each group and assign to the various rooms special treatment if the financial means are at hand to warrant it.

The natural grouping upon the most economic basis would be: porches and vestibules; corridors, lobbies, and solariums; administration and connecting public rooms; examination and orthopedic rooms; operating and delivery rooms; service and other working rooms, wards of all kinds; help of all kinds; closets and small spaces; and fixtures for the machinery and power rooms and similar spaces in the basement. The assignment of all spaces strictly to some one of these groups should take place only where rigid economy is essential.

A better working and more practical layout of the rooms and spaces would be according to the following groups:

The exterior fixtures: the vestibules; the first floor entrance lobby and main corridor; lecture rooms; all other corridors; small passages; and the office and reception and other principal rooms that generally are placed at the right and left of the principal entrance. The superintendent's room; the matron's room; diet and other kitchen and serving rooms; major and minor operating rooms and amphitheater; autopsy and delivery rooms; large wards and isolated rooms; small wards; private rooms; door call signal lights, outside of private rooms and small wards; rooms in service portion; spaces in machinery and similar parts of the building.

METHOD OF PROCEDURE.

The usual course of procedure in laying out a lighting scheme is to plat the outlets in some convenient spot on the plans, figure out and indicate a quantity of light that will light the room, and finally to select a fixture which will fit these conditions and perhaps by some happy chance bear some relation to the room in which it is to be placed.

In a hospital building the exact reverse of this course should be followed. As the rooms and spaces are almost invariably designated for some special purpose, we should first select a lighting fixture that will meet and further the accomplishment of that purpose, next we should compute the amount of light or current necessary to do what work is to be done, and lastly we should plat the outlet where it will perform its office most efficiently.

As an instance of the merit of this method we can say that the best method of lighting operating rooms has been arrived at by this course of procedure. It indicates a distinct line along which advance can be made in the perfection of the types of fixtures used.

In contrast with the development of a model type of fixture, the computation of the quantity of light required and of the location of the outlet to carry the fixture are quite simple subordinate problems.

TYPES OF FIXTURES.

The fixtures to be used in a hospital may be of the direct, semi-indirect, or indirect type. We are using these terms as only applicable to the fixtures suspended from the ceiling. By **direct fixtures** are meant those with downward directed shades, which are usually suspended from the lowest point of the fixture. Advisedly these should not be too close to the ceiling, or very little reflection therefrom will take place. Neither should they be hung less than seven feet from the floor.

By **semi-indirect fixtures** are meant those in which the lamp is suspended in a glass diffusing bowl, through which part of the light is transmitted and diffused while part of the light goes to the ceiling, and is reflected therefrom, around the room. This type of fixture should never be used without a glass dust cover over the bowl, which should not be flat.

By **indirect fixtures** are meant those in which the lamp is suspended in an opaque bowl with a highly polished reflector on the inside. If the reflector is properly designed it will reflect about 80% of the total or spherical candle power of the lamp against the ceiling where it will be re-reflected around the room. Fixtures of the indirect bowl type should also never be used without a glass dust cover **which should not be flat.**

Indirect fixtures are best fitted for entrances, lobbies, main corridors, offices, and lecture halls other than amphitheaters.

Semi-indirect fixtures are best fitted for large and small wards and private rooms. They are also the best, in an especially designated type, in operating, autopsy and delivery rooms.

Direct fixtures are best fitted for all rooms other than the above mentioned, where through reasons of economy it is not permissible to go above certain cost figures. When used in rooms where any continuous work takes place they should usually be hung at such a height that they do not come within the direct line of vision.

There is another type of direct lighting in which the lamp is enclosed in a spherical or other shaped globe. This may be called the **direct diffused system.** It is not an economical method, as considerable of the efficiency of the lamp is absorbed in the globe; but on the other hand it diffuses the light in all directions, and as the distribution of light from a tungsten filament is in section something like the shape of a butterfly, this method supplements the light in the dark places. This is its chief virtue, together with the fact that under the diffused light which it gives, pupillary contraction almost never take place. If sufficient quantity of light is not thrown upon a given point, eye strain will occur from straining to see.

The difference between the three methods lies in their effect upon the organs of sight. Under the direct method, with an open downward reflecting shade, a relatively strong zone of light is produced directly beneath the shade. If this light falls upon a polished, white, or reflecting surface, or if any rays directly reflected come within the range of vision, eye fatigue ensues, and pupillary contraction takes place. The result of pupillary contraction is to compel a given amount of work to be done by a smaller portion of the retina than usual, which results in excessive eye fatigue and consequent strain. The many uses to which fixtures of this type are put is due to their economy in first cost and also to the fact that in most places where they are installed people move almost instinctively out of the range of the reflected rays and so protect their eyes.

Is it possible, it may be asked, to light a hospital throughout satisfactorily by any one of these methods alone? In reply it may be stated that it is possible, but it would require exceptionally expert knowledge to do so, and expert knowledge on the subject is still extremely rare. Only a few of the factors which would have to be taken into account in a lighting scheme are the strength or quality of light gathered at one or more points, its brilliancy, and its color; the surroundings or environment in which the light is used, and their color; the surface on which the light falls, either dull or semi-glazed; the presence of color in the room; the presence of shadow-casting objects as rest spaces for the eye. The effect of all these various things upon the patient has to be weighed and taken into account.

If direct fixtures are used in wards and one-bed private rooms they should be kept out of the range of vision of the patient. The same is true of semi-indirect fixtures, unless a transmitting glass is used which will modify the color quality of the light. Indirect opaque bowl fixtures can not be used in wards and private rooms unless the quantity of light is kept low in candle power so that the surface brilliancy of the walls and particularly of the ceiling, is kept low. Highly lighted ceilings would be very annoying to a patient.

GLASSWARE AND THEORIES OF VISION.

Since all artificial light sources unshielded are irritating to the organs of sight, it is necessary that their light be modified. One of the most important factors in the lighting of a hospital is the type and color quality of the glassware used.

Accepting without discussion the theory that the rods and cones in the eye transmit to the cerebral centers the sensations of light and color, that the rods respond to form and to white, gray or low light, and that the cones respond primarily to color, it behooves us to select such glassware that both the rods and cones will divide the work to be done. This is particularly important for those rooms where patients are and where the cost of fixtures that will give both the sensation of white and of colored light is an item to be considered. There are to be had at the present time two types of glassware whose modifying tendencies are in the proper direction. One of these types is a mixture containing opal. In the manufacture of this type the glass shades are made in moulds under forced pressure, which drives the small particles of opal evenly throughout the mixture, where they are caught and held by the cooling glass. The result is a glass of semi-transparent quality with high transmitting properties and of a slightly greenish-yellow color. The so-called Velluria, Druid and Alba glass are of this type. Their virtue lies in the fact that the greatest sensibility of the organs of sight at ordinary intensities lies somewhere in the greenish-yellow, and in so far as this kind of glass modifies the white light of the tungsten and still whiter light of the nitrogen filled lamp, it aids vision without causing eye-strain or fatigue.

There is still another kind of glass which is made by the plating process. Its structure can be seen by examining its edge, which shows an inner layer of clear glass, a middle layer of opalescent glass of a slightly greenish-yellow color, and an outer layer of clear glass whose outer surface has through acid action been given a satin finish. When a lighting fixture fitted with this glass comes within the range of vision, the center of the shade, through which the light passes directly to the eye, partakes of the greenish yellow tone, while the outer surfaces of the globe partakes more of the quality of opal and incline to a greyish white in value. We have then an effect of slight color in the center of the shade, while its outer edges, which come into conjunction with the form or shape, are greyish white.

In the case of this glass the rods and cones of our visual apparatus are both actively employed and eye strain and fatigue do not ensue.

The selection of fixtures for a hospital building is of primary importance in achieving success in its artificial lighting.

EXTERIOR AND VESTIBULES.

The exterior fixtures should be simple in design, with the light enclosed in a round globe, since such a globe will disperse the light much better than a hemisphere. The same is true of the vestibule.

HALLS, LOBBY AND ADJOINING ROOMS.

The entrance hall, and possibly the lobby, the adjoining corridor, the offices, reception rooms and other purely administrative rooms should each be lighted by an indirect fixture of bowl type with light hung perpendicular to the ceiling. The bowl should have a properly shaped dust cover. The quality of the light required in each place can easily be obtained by adapting the size of the lamp to the requirements of the situation. Indirect fixtures are also the best for use in lecture rooms. Indirect fixtures with more than one light should be avoided, since multiple light fixtures of this kind require a bowl of considerable diameter, which acts as a large-surfaced depository for dirt.

Indirect fixtures are the best for the rooms and spaces just mentioned because, if properly installed, they will disseminate the light evenly over any space where it may be desired. For certain purposes they are the most scientific fixtures in existence today.

SMALL CORRIDORS AND PASSAGES.

Small corridors and passages throughout the building may be lighted more economically, as far as the first cost is concerned, by direct fixtures with proper shades to disperse the light over the required areas.

ISOLATION AND EXAMINATION ROOMS.

Isolation and examination rooms can best be lighted by direct fixtures, with downward reflecting open shades and lamps of sufficiently high candle-power to give a powerful concentrated light. The same is true of **diet and other kitchens.**

OPERATING ROOMS.

Operating rooms have been lighted in an infinite number of ways: by a single light, direct type, pendant, placed directly over the table; by multiple light concentrating reflectors, placed within a single shade over the table (and this type is the least suited of any, as it is a powerful temperature raiser); by a circular ring of lights placed sometimes on the ceiling, and sometimes on a pendant ring, with the shade set at angles which concentrate the light in the center of the operating table; and by means of an adjustable crane having a cluster of lights at the end of the crane arm, which can be swung from over the patient and adjusted outwardly from its support and up and down by means of a worm. Some of these methods have no virtue whatever; some have one or another advantage to recommend them. The **best method of lighting an operating room** is by means of four pendant lights, hung at the four corners of a rectangle approximately 6x7 feet, with the short sides parallel to the window which lights the operating table by daylight, and with the center of the rectangle directly over the table.

One of the best pendants of this type has a lower glass diffusing bowl, on which is superimposed a glass dust cover. Above this is an adjustable deflecting shade which permits regulation of the light to be concentrated on the operating table. As these fixtures are adjustable. concentrating, diffusing, yet powerful, and are not over the patient and so do not endanger the success of an operation, either from heat or dust particles, they are important adjuncts to the success of operations that take place under the light they give.

DELIVERY ROOM.

The delivery room can best be lighted in the manner and by the fixtures I have just described as their adjustable mechanism permits the directing of the light whereever it is desired.

AMPHITHEATER.

Amphitheaters and class demonstration and operating rooms should also be lighted in the manner just described. In these rooms the long side of the rectangle from the four corners of which the fixtures are hung should be parallel to a line drawn through the operating table and the center of the amphitheater.

Autopsy rooms should be lighted in the same manner, and with the same type of fixtures recommended for operating rooms.

LARGE AND SMALL ROOMS.

Wards should be lighted by pendant fixtures of the semi-indirect type with translucent bowls of glass, possessing the qualities previously referred to under the subject of glass. These bowls should have glass covers and be supported by a center stem and not by chains. It would be a good thing if wards could be fitted with a system of dimmers, as any one at all familiar with conditions as they occur in wards, knows that there are times when very much more light is required than at others. In all wards there should be a portable light beside each bed and this should be of such design that it can be hung on the wall, or can stand on a table.

PRIVATE ROOMS.

The writer once asked a patient in a private room where he thought the light should be placed in the room. "Under the bed," was the instant response, "where it can be buried or reached if desired." Private rooms, being really wards on a small scale, require similar treatment, with the same type of center pendant fixture and an interchangeable, standing and hanging portable lamp beside the bed. The center fixture should be of smaller scale than the regular ward fixture.

DOOR LIGHTS.

Red and green signal call lights should be placed outside of the doors of private rooms. A new fixture of this type has a diaphragm between the two colored lamps, which excludes the possibility of both lamps appearing to burn while only one is really doing so. This is an improvement, as it obviates the possibility of the doctor and nurse both being called when in reality only one lamp has been turned on.

All other rooms in hospitals for economical reasons may be lighted by pendant fixtures, with downward opening shades, with bowl frosted electric lamps, or with brackets with similar shades.

QUANTITY OF LIGHT TO BE ASSIGNED AND ITS CONTROL.

The problem of the quantity of light to be assigned to the various rooms in a hospital is a complex one. It depends not only upon the use the rooms may be put to, but upon the classification of the hospital, whether general, contagious, for incurables, for the insane, for children, or for other purposes.

THE LOBBIES.

Main corridors, offices, and reception and examination rooms should be well lighted with an assignment of at least one watt per square foot of superficial floor space, this computation, like all those that follow, being based on the power of tungsten filament lamps. Small corridors and passages do not require over a half a watt per square foot of floor area. Officers' or nurses' living quarters and service living quarters do not require over a quarter of a watt per square foot of floor area. The same is true of bathroom and toilet rooms. Orthopedic and delivery rooms require an assignment of two watts per square foot, as do lecture rooms.

Operating rooms may be reduced to a supposed field of 12x15 feet which should be treated with four units or fixtures, each with a capacity of 300 watts, and spaced as previously suggested. Such an arrangement, with the proper fixtures, will deliver on the field of operations, 14 foot candles, which is sufficient for the performance of any operation.

There are on the market single unit fixtures, delivering 40 foot candles on the table. The consumption of visual pigment under such a fixture is such that seeing efficiency falls off very rapidly, and the added candle power is a detriment and not an aid in the performance of the operation. Furthermore fixtures of this kind raise the temperature directly beneath them from 12 to 20 degrees Fahrenheit, on the harmful effects of which, in some operations, it is not necessary to dwell here.

LOCATION OF OUTLETS.

In the location of outlets we have to take into account a purely physical factor resulting from the way lamps are constructed, viz.: the angles within which shades deliver their maximum efficiency or amount of light. It is upon this efficient angle that the shapes of proper light distributing shades are developed, and the shades constructed.

Outlets in the corridors and passages in general should not be farther apart than three times the width of the corridors. In reception rooms and offices the outlets should be centered so that they form squares not exceeding 16 feet on a side. The same is true of all rooms other than operating rooms, where they should be placed at the four corners of a rectangle approximately 6x7 feet on its sides.

Delivery rooms should be divided into four squares with a light in the center of each square.

The same is true of autopsy rooms.

It is not possible here to more than touch on the subject of the location of outlets.

This paper is intended to suggest lines along which studies can be made of this very important subject by those who are also in direct connection with the problem.

With regard to lighting schemes already extant in hospitals, I would suggest the following as a line of examination:

1. Is the lighting efficient?
2. Is it scientific and fitted with scientific glass ware?
3. Is it so planned as to fixtures, layout of outlets and quantity of current consumed that it is economical?
4. Are the fixtures such that it is possible for the hospital to do its best work?
5. Are the physicians and surgeons satisfied with the artificial light under which they are carrying on their practice?
6. Has the hospital spent sufficient money for its lighting layout to be at its best for everyone, physically, physiologically and economically?
7. Does the hospital keep records or data of the efficiency of its lighting system, as far as the physicians, surgeons, house force and patients are concerned?

It probably does keep such data regarding other factors affecting their patients; and it seems advisable that lighting efficiency data should also be kept in order that the science of artificially lighting the hospital may keep pace with the progress of all other departments.

ROUND TABLE CONFERENCE.

Conducted by Dr. F. H. Holt, Superintendent,
Michael Reese Hospital, Chicago.

Acting-President: I will ask Dr. Holt to take the chair and conduct the round table conference and the question box. While Dr. Holt is taking the Chair, if any of our members have any questions I wish they would write them down, and while it is very short notice we will do our best to see if they cannot be answered.

Dr. Holt: I will ask the members to write their questions, and while they are doing so I will ask the gentleman from Texas who presented a question this morning to present it again.

Mr. Franklin: My question this morning was whether our hospital of 250 beds, with an average daily attendance in the hospital of about 225, an interne staff of about seven, with one paid interne who is at the head of the staff, usually selected for the second year, having made the best record for the previous year of the number, would it be practicable to have a lady interne as one of the six? We have the work divided into services of at least two months. Just to be understood, let me explain. On the first floor of our building, we have about 85 patients daily. That is ward service. We have pay patients, male and female. All the railroad patients are male. It strikes me that this woman could fit in on the medical floor—we have both male and female service—and then in our surgical division, where we have the same thing. It seems to me that she could do satisfactory service in the laboratory and in the anesthetic work and in assisting in the operating room, so that I feel we have six months' service in which she could serve satisfactorily, and that there are six months in which she could not give satisfactory service. Would it be practicable under such circumstances for this lady to be appointed as interne? I have the question before me now, and that is why I am asking.

Dr. H. O. Spaulding: I will say that I was an interne in a hospital where there were four internes, two women and two men. The women internes could not do the ambulance service, and, as to their ability to carry on the work, it depended a great deal on the individual. There was one woman whom I have in mind who stood up and did a man's work, except for the ambulance, perfectly satisfactorily, except, of course, in the care of certain of the male patients. I have at the present time out of eight ward physicians in the state hospital three women physicians. It is a rather large number. The main objection, it seems to me, is that the service is not so elastic; that is to say, you cannot shift them from one part of the hospital, or from one service to another, if emergency requires. I have found them as a rule, exceptionally good in carrying out detail work. I do not think that it would be satisfactory to put them in charge of a service, especially where the male internes are subordinate. Somehow or other, the men do not take kindly to that position. But I think it is possible to use one woman physician among your seven internes and get good service. There are some cases that she will probably take hold of better than the men. I have found it fairly satisfactory to have about one.

Chairman: Will you tell us, Dr. Seem, what you are doing at Johns Hopkins in this respect?

Dr. Seem: We usually have a number of women on our house staff. I cannot remember that any woman has ever served on the surgical staff. Each year, we have one on the medical staff and she has charge of the women's medical ward. During the past year, we have had a woman who has acted as assistant resident on the obstetrical staff. It has been her third year in the hospital in that service. We usually have one on the children's service, and we have had them on the psychiatric side, also in charge of the women patients, and then they have served on the gynecological service. Of course, you have to have separate bathrooms for them and the rooms which they occupy are not off to themselves, they live on the same corridor where the housekeeper lives. I think that is the main trouble.

Chairman: Is there any other superintendent who has female internes in his or her institution?

Miss Jaquith: In my hospital, I have six women internes and we have always had women internes. Before I lived there, I was in a hospital where they had men internes, so I have had both. I have never had them mixed, but I have had them separately, and I feel that the woman interne will do just as good work for you, if she has physical strength, as the man. She may do better work sometimes than a man, but, of course, the personal equation has everything to do with it in both cases. I really do not know how I should like to mix one woman with a number of men in that way, because I do think it might be a burden to you to provide for her, as has been suggested, but as far as doing the work for you I think you might find it satisfactory.

Chairman: Is there any one else who wishes to speak on this question? I understand that at the Cook County Hospital in Chicago, they have both male and female internes. As a recent comer there, I am not prepared to tell you how they arrange it. The question has come up at the Michael Reese Hospital, where I have recently gone. We have had applications from women and the interne committee informed me that they had four at the County. Perhaps some one from Chicago can tell us under what conditions they are there. If not, I will ask the Secretary to take up such questions as are ready.

Question 1. What is a hospital day? Is it a rule to count each calendar day as a full day?

Chairman: Will some one answer this question. Dr. Burlingham, have you anything to say, can you answer that?

Dr. Burlingham: I do not fully understand that question. Is it in regard to the payment of the patient's board, or in reference to the making up of a per capita cost?

Dr. Bunn: I can answer the question. It is in reference to the payment of a patient's board.

Dr. Burlingham: There are hospitals wherein a charge is made for the day the patient enters and the day the patient leaves, although they may stay only a part of each of those days. Then there are hospitals that count the first day, but do not count the day of discharge. Of course, at hotels you pay for exactly the time you are there. That seems to be the most satisfactory plan, although I have known patients when they got used to the system to be willing to pay for the day of admission and the day of discharge also.

Dr. Warner: That question was discussed quite at length in the Cleveland Hospital council, because one of the first things that we took up was some method to measure each hospital service to the community and we endeavored to determine what the hospital day should be. The same question that Dr. Burlingham brought up also came up and was decided by the Council in the same way, that the payment for a private patient should be as for a hotel—that is, payment for the actual time—but it was the decision of the Council that the service to the community would be best measured by counting parts of days as days because of the unusual and greater expense involved in those days of admission and discharge.

Chairman: I would like to hear from some of the lady superintendents in regard to this. Miss Prindiville, what do you do at your hospital in regard to counting the days?

Miss Prindiville: We count the day that the patient is admitted, but not the day of discharge.

Chairman: I will say that at the Boston City Hospital we used to count parts of days for patients occupying private rooms, but full days for those paying for ward accommodations.

Mr. Bishop, Pennsylvania: I should like to ask what the custom is in regard to figuring the per capita cost. I know that at a number of places, if a patient comes in in the evening for treatment, say at six or seven o'clock, and may go home the next morning at eight or nine o'clock, the hospital is credited with two hospital days because the patient is there on a portion of two different days, although he has been in less than twenty-four hours. This would give the hospital a considerably smaller per capita cost.

Question 2. What responsibility has a hospital for the social life of the nurse? What are the hospitals doing in this respect?

Miss Barrett: At the hospital where I am superintendent, we have a Woman's Board, and under this board they have a committee appointed for arranging for the social life of the nurses. They arrange entertainments, automobile rides, parties, and that sort of thing. It has been quite satisfactory.

Miss Carrie M. Hall: This question has been most fully answered by Miss .... in a paper this week before the National League of Education. The paper will be printed in the annual report. The experiment of having a social director in the nurses' home has been carried out for more than a year in the Newton Hospital and carried out most satisfactorily. It is their principle that the social director should be a young woman who is not a nurse and brings into the atmosphere of the nurses' home a point of view other than that of the nurses. She is, in this instance, a college woman and a woman who has had experience in directing both physical and social activities in other institutions.

She has established a branch of the Young Women's Christian Association among the pupils. She has increased their library facilities by having the hospital training school made a sub-station of the city library. She has arranged evening entertainments and has insisted upon outdoor exercise and has, in very many ways, increased the social activities among the nurses.

Miss Atkinson: We have on our board of managers a committee appointed, such as Miss Barrett described, to take care of the social side of the nurses' life.

Chairman: Miss Leck, have you anything to say about this?

Miss Leck, Detroit: After the study hours are over for the year, the classes take up the entertainments for the summer to a certain extent. There will be the senior and the intermediate and the junior and the probationer classes, and I ask the nurses to stay in one evening during the week and during that evening each class entertains in turn. I think that is a very good idea to keep them in during the summer months. The idea of having the nurses affiliated, perhaps, with the Young Women's Christian Association, I like very much. Where I was before, we did that and very successfully. When the Young Women's Christian Association had a special entertainment the nurses were always invited and that broadened their interests.

Miss Wright: I am not a member of this Association, but I am keenly interested in the social life of nurses. (Chairman: We will be very glad to hear from you.) I feel that perhaps during the long nine months of study and classwork, that they become, perhaps, to their private patients rather shoppy, talk too much of hospital affairs, and I have found that they very much appreciate having a woman come in from a woman's club, a woman who, perhaps, is chairman of the current events section. I have had such an arrangement and the nurses looked forward to that evening very greatly, as an evening where they relaxed, a perfectly charming woman who was keenly alive to all the topics of the day and brought them an interest which the patients got the benefit of during the week.

Question 3. What is the best method of organization for a woman's auxiliary? Is a woman's auxiliary a source of strength or a source of weakness to the hospital?

Mrs. Horner: I have heard a good many people speak about the woman's auxiliary as rather a drawback, but, speaking personally, I know that I get very many things for the hospital, the patients, and the nurses that I would not get if I did not have a woman's auxiliary which was very much interested in every phase of the hospital work.

Chairman: Will not some one else who has a woman's auxiliary kindly favor us?

Miss Robinson: I can say for the woman's auxiliary that they are always a present help in time of trouble, a fine body of motherly, capable women. They have about 90 members, 30 of the 90 being very active. For years, they have furnished our linen and many other things that we need, and whatever emergency arises at the hospital in the way of things which we need, and in the clinic, they stand by us and get for us. Just within the last few months, they have raised $3,500.00 for us for the furnishing of the nurses' home. They are certainly a source of help in every way.

Miss Butterfield: I cannot answer the question as to what is the best form of organization, but I can give our experience with the woman's auxiliary. We have a woman's board who have no executive powers, but are only advisory. They are elected by the board of trustees and are of equal number, 15 trustees and 15 members of the woman's board. We find that with that relationship existing, we get the highest use from the women; that is, they act as a sort of buffer between the hospital and the community in the fact that they help create a favorable impression for the hospital. We find that in the direction of the nurses' social life, they can give admirable service and they can help in many ways to furnish the form of social life that is ordinarily given in hospitals. They have been of use in such matters as furnishing the nurses' home, even in furnishing the hospital, things where taste is concerned, where they are a great aid and we also find that their inspections which are not on regular days, are quite a stimulus to the members of the hospital force in keeping up appearance and by giving us an outside viewpoint that we could not get in any other way.

Miss Prindiville: I would like to say a word about the ladies' auxiliary. One has been started at the hospital where I am and now we have 105 members of the leading ladies of the city. They do not visit the hospital, they interfere in no way with the management of the hospital, but they aid in furnishing the linen, in making the curtains and various other things for the hospital, and they have been a great help. They meet once a month and sew for the hospital. I find them a great help.

Miss Smiley: I have both a ladies' auxiliary and a ladies' aid, and they have done a great deal for the hospital in every way. They not only furnished the nurses' home, but purchased the land and purchased the home for 60 nurses and 10 attendants. They are, at present engaged in raising money for adding a children's department to our present hospital. They make weekly visits to the hospitals, both ladies' societies, but on different days. There is no set day. They look into the wards, see how the patients are taken care of, not interfering, but just in an interested way. Both societies do all that they can to furnish anything that the hospital requires. We also have ladies on the training school committee from these societies. It works very well.

Miss Barrett: In connection with our hospital, we have a society which has a membership of, I think, three hundred. They have tried to care for all the linen of the hospital. One feature which they carried out was a very large fruit shower, which they took care of during the strawberry season and continued during the summer, canning and preserving the fruit. I cannot give you the figures as to just what they gave us last year, but it was a very great help in furnishing good fruit for our patients. Perhaps, they do not always accomplish as much as they plan to do—they plan to sew, and I find they do not do a great deal of work—but I think the greatest benefit of an auxiliary to a hospital is the fact that there are more people interested in it, and interest in the work is spread among the community.

Mr. Hall: I am not now connected with a hospital which has a ladies' board. I have been connected with a hospital which had women as members of one sort or another, and I have been connected with one hospital which has women on its board of trustees, but it seems to me that the women have a very definite place in the hospital management. However, I think their duties should be very clearly outlined; they should know exactly what their responsibilities are, where they begin and where they cease, whether they have a responsibility concerning the training school, or whether they have a responsibility concerning the supplies of the hospital. I believe in an advisory board of women for the training school.

Dr. Camp, Oklahoma: I wish I had something of that kind in my hospital. I have no experience with ladies' aids or ladies' auxiliaries. I am getting some good data now on these points and will go home and put it into effect.

Mr. J. B. Franklin: We have a ladies' auxiliary. It was organized by authority of our board of trustees. The auxiliary has committees to represent the different activities, the linen committee, flowers, other committees, and these committees meet and give aid from time to time in these various departments. They help wonderfully. I find them in these matters a very great help.

Dr. Spaulding: At the state hospital, of course, there is no ladies' auxiliary. Two out of the seven trustees are women, and I find that they are a good deal of help, and in certain details of the work their advice is of a great deal of value. I have no experience, however, with the auxiliary board.

Chairman: Dr. Summersgill, what are you doing in the west in this respect?

Dr. Summersgill: At the hospital, at present, we have ladies, not connected officially with the board of trustees, but simply desiring to work in connection with the social service department and also the departments of maternity and pediatrics. They show a good deal of interest in the hospital and are very charitably inclined. At the University of California hospital, the Board is in its infancy so I will not say anything about it. It has only been started during the last few months. On the whole, I think the auxiliary board depends upon how their duties are regulated, what they are expected to do. In some hospitals, the ladies' boards practically run the institution, although there may be a superintendent under which the board exists. It is, of course, rather a detriment than a help then. Where the ladies' boards appreciate and understand their position in relation to the institution, in so far as giving assistance and rendering aid, they are of very distinct value.

Question 4. What should the dietitian's work consist of? Does the care of the dining room come under her supervision?

Chairman: I think this was asked by some one who wanted Miss McCullough to say something on it, so I will ask Miss McCullough to open the discussion.

Miss McCullough: I think the dietitian should be responsible for the dietary department and everything included within it. That, of course, would take in all of the dining rooms, the entire food problem, both in the preparation, in the care of it, and in the serving of it. If she is at the head of the department, she can keep her finger on all the items at one time. I cannot understand the dietitian who would not have charge of the dining room and the whole food problem.

CHAIRMAN: Have we any dietitians here who will favor us besides Miss McCullough?

DR. WARNER: I just wanted to add that I made that change in the last year and the saving, I am very sure, is paying that dietitian's salary several times over; I mean, making the department include the full dietetic work of the hospital, the storing of foodstuffs, the cooking of foodstuffs, the transportation of foodstuffs, the serving of food and the supervision of garbage. I am quite sure there is saved the salary several times over.

DR. BURLINGHAM: I do not think that I have anything further to say, except that we have rather preferred to keep the garbage inspection in the hands of the housekeeper instead of the dietitian. It is just the way that we prefer to do it. It has nothing in particular to do with the department. I see no reason why it should not work perfectly well for the dietitian to do it.

DR. SEEM: The garbage inspection with us is under the dietitian. One of her assistants inspects the garbage every day and one of the members of the resident staff attends with her once a week.

CHAIRMAN: Are there any other questions to come before the meeting?

MISS BARRETT: I should like to ask if it is considered that the dietitian should do the purchasing for her department?

CHAIRMAN: Miss McCullough, will you answer that, please?

MISS MCCULLOUGH: I think that is a question for the administration. Some dietitians do purchasing and do the entire work. In other hospitals, the superintendents prefer to do it. I think that in all such questions the dietitian should be considered, because she is responsible for the per capita cost of food.

CHAIRMAN: I think, Dr. Summersgill, we have exhausted the questions.

ACTING-PRESIDENT: I have an announcement to make, which is that tomorrow night we will again combine the Small and Large Hospitals Sections. Only one stenographer appeared, and in order that we may have the transactions of all our meetings, we shall have to combine the meetings.

DR. HOLT: May I ask if any communications have been received from the American Medical Association with regard to their commercial exhibit? They have a very nice one and I think the Exhibitors would be glad to have our members go down and see it.

ACTING-PRESIDENT: We have received no invitation. In fact, I inquired on the opening day and they said that no one would be permitted to enter the exhibits unless they had an American Medical Association membership. The meeting is adjourned until tomorrow.

THURSDAY, JUNE 24—MORNING SESSION.

Called to order by Acting-President Summersgill, at 10:00 a. m.

Acting-President: I desire to announce, first, the appointment of the committee on time and place of convention for next year: Dr. Andrew J. Warner, Chairman, Miss Burns, Mr. Bartine, Mr. Spaulding. None of the Auditing Committee have put in an appearance and it is necessary for me, therefore, to select for that committee Dr. Robert J. Wilson, Mr. Franklin, and Dr. Bachmeyer.

The firm of Kny-Scherer Company have been sending telegrams, have been receiving and sending them, in connection with the fact that there is an interference with the supplying of surgical apparatus in this country on account of the blockade, and they wish this Association to take it up with the Secretary of State in the form of a petition requesting him to request Great Britain to lift the embargo on hospital appliances and surgical instruments. Surgical instrument houses, etc., have for years been opposing the efforts of this Association in many ways, they have been opposing the lifting of the tariff on hospital apparatus, they have maintained a good many lobbies in Washington which were opposed to our committee which was to memorialize Congress to release the charitable institutions from paying duties. That is in one way apart from the subject, but it seems they rarely come to us unless it is for themselves. I am of the opinion that it is a question that this organization ought not to mix up in. It is a very delicate thing and involves neutrality, and if we take any action, I think that our action should be between this Association and the British Hospital Association. There have been rather close ties between the Associations for a number of years. They have had representatives here, who have read papers. Two of their members are honorary members of this Association, and I doubt the wisdom of transmitting any petition to our State Department. However, I submit the matter to your judgment and consideration. As nothing has been said, we will simply drop the matter and take up our program. Before taking up the program, I wish to state that previous to being asked to serve as President, on May 3rd, I had obligated myself to take care of the Panama Medical Society dinner and at that time we decided on June 24th. Therefore, Miss Barrett will preside at the meeting. We have Dr. Cabot as our guest and I hope you will all turn out and have a good and well-attended meeting.

CLINICAL RECORDS IN RELATION TO TEACHING AND RESEARCH. A PLAN TO PROMOTE CONSERVATION AND UTILIZATION OF MATERIAL.*

By Eugene S. Kilgore, M.D.,
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In connection with the reorganization of the University of California hospital in 1912 one of the important problems presenting itself was that of hospital records. To the teacher and research work especially, very few details connected with the running of a university hospital equal in importance the clinical record system. From the economic standpoint alone, it is clear that for this type of hospital, where the cost per bed per day is unusually high, a system which makes possible the greatest utilization of past material as well as present has a high value; indeed, if considered solely as an investment, it would more than justify the small extra expense required. It is the duty of all hospitals, however, and especially university hospitals to take a broader view of economy than the immediate saving of dollars and cents. The ultimate benefiting of the race, the lessening of disease and its more efficient alleviation through medical research are justly coming to be regarded as the most profitable type of benevolent investment. And the charitable hospital that neglects opportunities to advance medical science is like the manufacturer who throws away valuable by-products. That the great majority of American hospitals are following such a shortsighted policy of neglect is truer, I believe, than is generally appreciated. Not only is the proper kind of research on current cases too seldom undertaken; but, for want of sufficiently accurate, complete, and accessible data, a vast amount of useful material is constantly thrown away beyond the reach of those in the future who would utilize it.

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*Note.—This article with Dr. J. L. Whitney's article on page 112 of this volume is part of a series of articles on the subject of clinical records. Others in the series are appearing in the California State Journal of Medicine. Reprints of the series when complete, together with sample record forms, will be sent on request.

It was such considerations which prompted and, we believe, more than justified our small increases in time and money expenditure for developing the hospital record system. The university was fortunate at the outset in adopting the general plan of records followed at the Massachusetts General hospital, and later in securing for the custodianship of the records Miss Genevieve Clark, who received her training under Mrs. Grace W. Myers. The details of this system have been ably presented before this Association by Meyers[1], Hollings[2], and Howland[3]; and here it will only be necessary to re-emphasize the following points: (1) The necessity for adequate administrative machinery to insure getting uniform and correct data in regard to patients' names, addresses, etc.[4] (2) Permanency of the records. Only good rag paper[3] and non-fading ink should be allowed.[3] By all means the records should be substantially bound and kept in a dry fire-proof place. (3) Economy in paper, binding, and fireproof storage as well as convenience in handling will result from using both sides of the paper and limiting the number of extra laboratory sheets, etc.

COMPLETENESS AND ACCURACY OF CLINICAL RECORDS.

The hope of having anything but haphazard and fragmentary clincal records should be abandoned by any institution whose visiting staff will not give time and energy to the undertaking. An essential element is standardization of the general form of records and method of filing; and to this end by far the most businesslike and effective plan is to give over the direction of the record system to some one member of the staff who has the requisite insight and abundant interest in the undertaking and patience to carry it out. He will encounter a large number of details, and for a long time will have to educate other members of the staff as well as interns and nurses. Such an educative campaign is helped by frequent reports sent to the staff indicating for each service such items as: Number of operations or autopsies performed before the clinical diagnoses were recorded, number of records turned in with no blood pressure reports, etc., etc.

An unusual advantage is enjoyed by university hospitals in being able to train interns for two or three years before they begin their service. In the University of California a few weeks after the second year medical students begin the course in physical diagnosis and history taking, they are given an outline of history and physical examination records, which they follow from then on in reporting their cases, and which is prescribed for the use of interns. The exact form of this outline is not so important as it is to have uniformity in the general arrangement, which lessens the number of important facts overlooked in the writing and greatly facilitates later endeavors to hunt up statements that are wanted. Much stress is laid upon history taking, and students are given a good deal of practice in it; the aim in teaching being first for accuracy and completeness and second for conciseness and the elimination of irrelevant matter. Hospital interns are chosen from among students who are known to write acceptable clinical records. We are opposed to the idea of allowing student histories to go into the hospital records, on the ground that the high value of these records merits for them the best help available.

One common defect of clinical records is that they do not make clear to the one who reads them several years later the exact nature of various procedures mentioned, e. g. the determination of sugar or urea in the blood, the technic of blood pressure measurements, etc. Incomprehensible abbreviations are also prone to creep into the records. The latter may be avoided by supplying a list of permissible abbreviations[4] and insisting on their exclusive use. This may well be incorporated into the history outline prescribed for students and interns and a copy bound with the records. The success with which such a plan works will depend largely upon the simplicity and fairly obvious meaning of the abbreviations allowed.

The record forms[4] should be carefully planned to encourage completeness in reports. Thus, in connection with the differential count of leucocytes should be stated the number of cells on which it is based, since this will very largely determine its value. For the same reason the test used for occult blood, the method of determining sugar percentage, of reading blood pressures, etc., should all be indicated.

Ambiguity in other reports we have planned to avoid by the use of a "ward reference book"[4] containing the exact description of various clinical procedures in use which have not as yet become well established in the text books. The book has loose leaves and an alphabetic index; and whenever it is decided to try out something which is not already a ward routine, for example, functional liver tests, someone looks up the literature and writes out the exact technic to be followed, together with references, and the date when the addition to the book is made. A copy of this ward book is bound with the first volume of the medical records as a sort of preface, and from time to time additions or changes are to be noted in later volumes. So that at any future time it will be possible by comparing the date of a given history with the dates on these introductory pages to know the exact technic in vogue at the time. Aside from this help in clarifying the records, this ward reference book is found very useful to interns and students who are set at tasks that are new to them. The book also contains the prescribed history outline and examples of the exact form in which various routine clinical reports are to be entered.

The training school for nurses as well as the medical school is a valuable asset in the development of good clinical records. Nurses are readily taught the technic of blood pressure determinations, using the palpatory index for systolic pressure and the change or disappearance of sounds for the diastolic. With proper supervision we believe their readings to be reliable. The result of this training is that nurses in the out-patient maternity service can keep track of patients' blood pressures; also that in ward cases when desirable, blood pressure readings may be taken as often as the temperature and pulse. This is not at all inconvenient when a machine is left clamped to the bed and perhaps even the cuff is left in situ. Nurses readily do this as part of the ward routine, whereas the inconvenience of it on the part of the staff is practically prohibitive. Nurses are also trained to count the heart rate by using the stethoscope and to record this as well as the ordinary pulse count when there is a discrepancy. If desired they can also record specific gravity of the urine as well as the daily amount, patients' weights, etc.

Pupils in the training school are made to feel that accuracy and neatness in their reports are essential parts of their training; and since this attitude has been taken they respond almost without exception with pride and interest in making their records as good as possible. The charts are no longer hung on the beds where they are almost certain to be soiled; but each, together with the intern's clinical record, is safely kept in an aluminium binder in its pigeon-hole on the nurses' desk. One nurse at a time is responsible for the charts in a ward. The result is that although a great deal more matter is now put on these charts (7 to 9 separate graphs)[4] and they cover more days than formerly (three weeks of four-hourly observations on a page), the need for recopying is much less frequent.

For the further promotion of completeness and accuracy, the records before filing are reviewed by the interns and residents, by the chiefs of service when they write the diagnoses, by the custodian of records, and finally by a member of the medical staff who is conversant with the diagnosis nomenclature and filing system, and who makes sure that the form of the diagnoses will result in their proper filing, and who also adds secondary diagnoses which may have been overlooked[5].

After filing, the records are still incomplete until every effort has been made to secure end results by an efficient follow-up system.[1], [4] Such a system should embrace the records of all services and should include: (1) The psychological preparation of patients leaving the hospital. (2) The personal note so far as possible in the follow-up letters. (3) Provision for follow-up letters at shorter or longer intervals according to the nature of the case. (4) Co-operation on the part of the outpatient staff by transmitting to the house record room notes of important developments in cases seen by those who have been in the wards.

ACCESSIBILITY OF MATERIAL.

This is only secondary in importance to completeness and accuracy. Heretofore it has not to my knowledge been customary even for hospitals with high standards to do more in this direction than keep a diagnosis card catalog with perhaps cross references to the main complications and a separate set of cards referring to regions affected and to operations. While such a catalog is essential (it should contain many more secondary diagnoses than is usual)[5] and admirably serves the purpose when it is desired to look up cases of a certain disease, it is of little or no help to the one who wishes to analyze, for example, cases with high white blood count, cardiac arrythma, or albuminuria, or cases who have had vomiting or chest pain or dizziness as a symptom, or who have had typhoid fever in the past, or in whose families there was tuberculosis or obesity, etc., etc. Heretofore the only approach to such data was through tedious hours or days or weeks of reading old records; and it is not surprizing that comparatively few analyses from such points of view have been made. An experiment which we have carried out during the past two years has shown that with comparatively little initial expenditure of time, it is possible to make such facts as these as accessible as the diagnoses themselves.

A large card reproduced herewith the size of the record sheets (21.5x28 cm.) is printed on one side. At the top are spaces for the patient's name, age, hospital number, and diagnoses; and on the remainder of the card are headings to cover the main points in family history, past history, present illness, physical examination, laboratory and other clinical procedures. One of these clinical index cards is sent by the office with each case admitted to the medical service; and the intern while writing the regular history at the bedside underscores or negatives items on the card referring to history. E. g. he underlines "typhoid" if the patient has had typhoid fever, and he draws a circle through the word if there is no suggestion of typhoid in the history; but if, for any reason, the information cannot be obtained or is doubtful, the item is questioned or not marked at all. Since it is not desirable to fill the regular history with a great many negative statements which do not have an obvious bearing on the case, this card places on record many negative facts which otherwise would certainly not be preserved.

The remainder of the work on this index card is done in the record room. After reviewing the marks made by the intern, the custodian proceeds to read the present illness, physical examination, the later clinical notes on the case, as well as the temperature and laboratory charts, and checks off the findings on the index card. For example, if the spleen is felt or is enlarged to percussion, the word is underlined on the card; if a heart murmur or percussion change or arrythmia is noted, "heart" is underlined; if astereognosis or cutaneous anesthesia is present, "sensory changes" on the card is underlined, and so on. It is obviously impossible and not desirable to go into further subdivisions on the index card. Its purpose is not at all to take the place of the clinical record, but to assist in finding the desired material in the records. If one wishes to collect the cases in which anesthesia or hypesthesia was found, a clerk in a few minutes will turn over the cards for a year and get together all the cases that have shown "sensory changes," and among these will be the desired material.

A few important treatments are listed, such as digitalis and intravenous medication. All the common. laboratory and bedside clinical procedures have a place, such for example as gastric lavage, puncture of chest, spinal canal, etc., functional tests, complement fixation tests, sensitization tests, x-rays of various parts of the body, pulse and other tracings, photographs, physical measurements, etc. These are simply marked to show which were done. The results of tests are indicated only when they can be expressed by a mark or two e. g. Wassermann, Widal, tuberculin, phenolsulphonphthalein elimination, etc. Similarly the card when finished contains the highest and the lowest recorded figures for temperature, pulse, respiration, white blood count, hemoglobin, systolic and diastolic blood pressure, amount of urine, etc. The range of usefulness thus afforded is great. Within a few minutes one can have placed on the table the records of all cases that have had fever with big spleen or low white count or positive Wassermann or blood culture; cases with headache as a symptom and systolic blood pressure above 170 or hemoglobin below 50%, etc., etc.

It will be observed that the card is designed to give unusually complete information regarding diagnoses, showing who made the clinical diagnoses and how far they were corroborated or amplified or contradicted by operation or autopsy. Pre-autopsy diagnoses have always been difficult to obtain in definite written form. A method for securing them with a good deal of cer-

UNIVERSITY OF CALIFORNIA HOSPIT

....	....	....	..................19.
Hosp. No.	Name	Age	Entered Hospital

Clin. Diagnoses (Those dated before proof by visiting staff marked "V," by resident "R," interne "I." Those proved correct "c," wrong "w."

....
....
....
....
....

Family History.

Alcoholism
Apoplexy
Cancer
Diabetes
Gout

Obesity
Epilepsy
Insanity
"Nervous breakdown"
Miscarriages

Tuberculosis

Past History.

Race { F..................
M..................Birthplace..................................

....
....
....

Residences in last 10 years. Occupations in last 10 years.

Measles
Mumps
(with orchitis?)
Whooping cough
Chicken pox
Smallpox
Vaccinia
Scarlet fever
Diphtheria
Typhoid

Chorea
Arthritis
(ac. art. rheum.?)
Tonsillitis
Pneumonia
Pleurisy
(tapped?) Operations:
Malaria
Otitis media Injuries:
Genital sore

Gonorrhea
Habits:
tea...... cof......
alc...... tob......
drug..............

Symptom Catalog (from History and Later Clinical Notes).

Pain:
Head
Face, throat, neck
Chest
Abdomen, pelvis
Back
Extremities

Joint Symps. (not pain)

Other sensory changes: an-, hyp-, hyper-, or paresthesia, abn. temp. sense

Neuro-muscular apparatus: weakness, paralysis, gaits, tremors, contractures, atrophies

Speech defect (including aphasia, agraphia, etc.)

"Nervousness"
Vertigo
Convulsions
Unconsciousness
Mental changes
Miscel. psychic phen.

Sphincter: rect., blad.

Other G. U.

Eye: spots, flashes, blindness, diplopia

Ear: deafness, tinnitus

Respiratory: nose, throat, larynx, cough, dyspnea, orthopnea

Circulatory: palpit., flushing

Digestive: anorexia, other appetite, constipation, diarrhea, vomiting

Blood from nose, lungs, stomach, rectum

Body surface: pallor, jaundice, edema, itching, sweating, falling hair

Feverishness
Chills
Malaise
Sleep
General strength
Wt.: gain, loss

Physical Findings

Body surface:
edema, jaundice,
pigment., cyanosis
purpura, herpes

Head and face: ear
Eyes: ext. musc.
pupils, reactions,
hyperthyr. signs

Mouth Throat
Thyroid Lymph no
Chest Lungs
Heart Arteries
Veins

Abdomen: tendern
mass peristal
liver spleen
R. kidney fluid
hernia L. kidn
penis testes

Back

Extremities

Reflexes:	Abs.	Dim.	Inc.
Patellar			
Achilles			
Abdom.			
Abnorm. refl.			

Clonus
Hyper- or hypotonu

Motor changes:
tremor
Sensory changes
Mental changes

Rectal exam.

Special exams.: E
Nose, Throat, Ea
Tracheoscopy
Gastroscopy
Esophagoscopy
Proctoscopy
Cystoscopy, etc.

Consultation:

CLINICAL INDEX CARD, MALE MEDICAL

Re-entry after ....Mos., No........ Report after........ Mos
.... " " .... " " .... " " .... "
ays in Hosp.

Additional Diagnoses Proved by Operation or Autopsy.

....
....
....
....
....

Other Clinical Data.

	High-est	Low-est
mp. (r.=rectal)	...	...
lse (irreg.?)	...	...
sp. (irreg.?)	...	...
. pr. max.	...	...
. pr. min.	...	...
quids (c.c.)	...	...
rine: amt. (c.c.)	...	...
Sp. grav.	...	...
Albumen	...	...
Sugar	...	...
NaCl	...	...
Total solids	...	...
lood: % Hgb.	...	...
Reds	...	...
Whites	...	...
% Neutro-		
% Lympho-		
% Eosino-		
% Lg. mono-	...	...
Plates	...	...
Urea	...	...
Noncoag. N.	...	...
Bleeding time	...	...
Coag. time	...	...
Fibrinogen	...	...
unctional Tests:		
Phen-sulph-phth.	...	...
KI	...	...
Lactose	...	...
Levulose	...	...
eight	...	...
hest capacity	...	...

t.=........cm.
hysical measurements.
trength tests.
lectrical reactions.

Sputum:
T. B. Influenza
Pneumococ.

Feces:
Blood
Parasites

Gastric lavage

Duodenal aspiration

Puncture of:
Spinal canal
Pleura
Pericardium
Abdomen

Sensitization Examinations:
Tbc. cutaneous
Tbc. subcutaneous
Luetin

Complement fixation:
Trepon. pallida { Bld.
Sp. F.
Gonococcus

Other Serological Exam.:
Agglut. typhoid
Agglut. paratyphoid

Special Chemical or
Physical Examinations:

Bact. or Path. Exam.:

Graphic Records: Resp.
Electrocard., pulse tracing

Special.

Photograph of:
Plaster models, etc.

Röntgen Exam.:	Plate.	Fluoro.
Head	......	......
Chest	......	......
Abdomen	......	......
Extremity	......	......

Treatment:

	Fluid.	Food.	Medicine.
Rectum			
Subcut.			
Musc.			
Veins			
Intra-spinal			

Digitalis and allied drugs

Venesection
X-ray

Notes:—Positive findings (e.g. an acknowledgment of a disease or a symptom by the patient or an abnormality discovered in exam. or lab. test) are underlined, negative ones marked out with a zero (0), and doubtful ones marked "?". No mark means information not obtained. A check (√) means test done without indicating result. A heading underlined means an abnormal finding outside the list following it. A heading marked out with zero indicates a general negative statement in record, e.g. "reflexes normal."

tainty was devised by my colleague, Dr. J. L. Whitney. It consists of a form giving authorization for the autopsy and containing space for complete clinical diagnoses as well as a short résumé of the case for the benefit of the pathologist and space for the pathologist's diagnoses and remarks. Special comment is made by him on clinical findings which fail to receive clear explanation at the autopsy table. The superintendent will not sign this permit for the examination until the resident of the service has written his diagnoses. The sheet is bound with the records.[4]

An important space on the card is that marked "special." In it are written special items from the clinical notes which are not in the printed outline, often special observations by members of the staff. For example, during thoracentesis the patient faints and is given stimulants. The opportunity is quickly taken of observing what happens to blood pressure, pulse rate, etc. Following the regular description of the tapping in the record will appear an account of the incident under the underlined heading, "Syncope and circulatory stimulants." This caption will later be copied under "special" on the clinical index card for that case. Other examples are: "Blood pressure in arm and leg," "Respiration experiments," "Electrical conductivity of surum." To the worker who is doing a series of clinical experiments this offers a convenient and safe way of preserving. his material; but its chief value lies in the saving of what would otherwise certainly be lost, namely the many valuable clinical observations made over a period of years in routine ward work, especially those which are not frequently repeated.

It is needless to draw out the comparison of this **availability** and its ever expanding usefulness with the hopelessly lost condition of similar valuable observations which are numerous in the records of most good hospitals.

To the plan outlined above there appear to be three possible objections,—that it is complicated, that it is expensive, and that it necessitates trusting too much to the discretion of a person without medical training.

In answer to the first,—It is as simple as it can be and yet give the results, and it works well. After two years' trial on the medical service, its use is now, with suitable modifications, to be extended in the University of California Hospital. It should not be undertaken, however, by any institution which is not prepared to employ a well trained custodian of records, and where there is not at least one member of the staff who will take a large personal interest and devote considerable time to it until it is well established. Profits are not to be reaped without this much invested.

In regard to the cost,—the large clinical cards may cost 1 or 2 cents each; and the record custodian averages about 20 minutes or 13 cents' worth of time in going over each medical history and transferring the data to the index card. This is estimated to be about one-third to one-half as expensive as it would be to have the records typewritten. Parenthetically it may be added that on grounds of accuracy and also of conciseness, we prefer originals to typewritten copies.

The member of the staff who checks up the work of the record clerk at first will have to verify each item on the index cards. Within a day or so an intelligent clerk will learn to transfer the material from the chart and laboratory reports with very little supervision; and in a few days of training she will do almost as well with the history and physical examination. She should, however, have assistance permanently in this part of the work. After six months' experience, Miss Clark's practice is now to mark places where there is any question, and two or three times a month I spend half an hour with her in reviewing the work. It looks as if in the future still less of my time will be required. The mistakes that one without medical training will make in this work are usually in checking off too much rather than too little; e. g. an unusual wording in the description of heart or lungs may lead her to record the findings as abnormal when they are not so. Since the cards are only to be used for finding data in the regular histories, the only result of such errors would be that when one is looking over a series of cases for some particular finding he will run across an occasional history that does not contain what he is looking for.

SUMMARY.

Experiences are reported in the co-operation of a university hospital, medical school, and training school for nurses to promote accuracy and completeness of clinical records. To the same end a few suggestions are offered concerning methods of recording certain data but these are being taken up in detail in other articles. In addition to the usual diagnosis index (which should be made to include many more of the secondary diagnoses) a plan is described for indexing many clinical facts which cannot be included among the diagnoses.

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THE MECHANICAL EQUIPMENT OF HOSPITALS.

By Mr. Dwight D. Kimball,

Consulting Engineer; President American Society of Heating and Ventilating Engineers; Member of New York State Commission on Ventilation, New York City.

The mechanical equipment of the hospital is one of its most important features, for upon the success or failure of the mechanical equipment largely depends the comfort of the occupants, convenience of the staff, and the general efficiency of the hospital. Moreover, the expense of operating and maintaining the mechanical equipment is usually one of the largest, if not the largest, single item in the cost of the conduct of the hospital.

A consideration of this most important phase of the hospital building will be attempted. The most important element thereof is the heating and ventilating plant. Reference will first be made to ventilation, and an effort will be made to review briefly the results of the last three years of study and investigation of the ventilation problem.

In a paper presented before the Fifteenth International Congress on Hygiene and Demography [2] the writer classified the different phases of the problem substantially as follows:

First, problems of chemistry, including:

- (a) Chemical composition of air; with special reference to oxygen, carbon dioxide, ozone; and elements of the air to which but little thought is now given.
- (b) Organic matter; that is, that due to exhalations and body excretions.

Second, problems of air conditioning:

- (c) Dust.
- (d) Humidity.

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[2] Washington, D. C., September 22-28, 1912.

(e) Temperature; optimum; effect of high, low, and varying.

Third, relating more especially to the mechanics of ventilation:

(f) Air volume, for different classes of people as affected by different systems of ventilation or different degrees of diffusion.

(g) Air movements; currents, drafts and breezes.

(h) Heating of air; is it injured by heating?

(i) Cooling.

(j) Recirculation.

And fourth, certain incidental problems:

(k) Natural versus artificial ventilation.

(l) Relation of ventilation to rest, sleep, normal activity, and violent exercise, and ventilation as affected by age, sex, climate, and different conditions of health.

(m) Methods of determining the effect of ventilation and its elements upon the individual and upon masses of people.

(n) Efficiency of installation and operation.

We will consider briefly the present viewpoint on each of the above.

It is generally agreed that the oxygen content of the air is not lessened, nor the CO^2 content increased in an occupied apartment sufficiently to enter into consideration in the problem of ventilation. Nevertheless, experiments of the New York State Commission on Ventilation show a decided increase in appetite on the part of the subjects in fresh air as compared with their appetite in stagnant air of the same temperature and humidity, even though the stagnant air is kept in motion; whereas the appetite does not appear to be affected by the introduction of CO^2 in the air supply of the extent of over 50 parts in 10,000 parts of air in the experimental chamber.

In connection with the subject of the chemistry of the air may be quoted the final conclusion of the report of the first year's work of the New York State Commission on Ventilation, as follows:

"The chemical changes in the breathed air of occupied rooms are of comparatively minor importance, but the substances present in such air appear to exert one definite measurable effect, a decrease in the appetite for food, an observation which for the first time offers scientific evidence in favor of fresh air as compared with stagnant air of the same temperature and humidity."

Recent experiment emphasizes the conclusion above stated. Inasmuch as oxygen is the active agent of the processes of oxidization which go on in the body, is it not possible that even the slight diminution of oxygen occurring in the occupied apartment has a direct effect on the extent of oxidization within the body? Or shall we credit the results of these experiments, several times repeated, to spooks?

Certainly CO^2 requires no further study. Its only significance lies in its value as an indication of the extent of the fresh air supply and its diffusion.

Ozone is not now considered a factor in ordinary ventilation. Doctors Jordan, Carlson and Sawyer[3] and others have shown that it has no value as a bacteriacidal agent within such concentrations as are not harmful to people.

Professor Czaplewski[4] states:

"As regards the air-purifying properties claimed for the gas: (a) We need not count on a destruction of bacteria in the air by ozone, nor their destruction on the walls of rooms, nor on objects in the room. (b) There is no oxidation of the organic dust particles. (c) There is, however, a positive effect on certain scents and the odors given off by the same.

"In ozonization of air we must differentiate between (a) ventilation with ozonized fresh air (best central ventilation); (b) ozonization of enclosed room air. The former is preferable without question, and is the only one that need be considered in the development of the ozone ventilator problem. Ozonization of room air is often only a makeshift of dubious value. Tests with ozonization of room air allow no very valid conclusions which might be applied to the ventilation of rooms using ozonized fresh air."

In general it has been used in concentrations of one part in two to four million. Recently the suggestion has been offered that it might have value if used in concentrations of one part to ten million. No entirely convenient means has been suggested for determining the degree of concentration in field work.

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[3] The Journal of The Am. Med. Ass'n. Part 1, Vol. LXI, pp. 1007-1015.

[4] Metallurgical and Chemical Engineering, April, 1914.

As to organic matter of a toxic nature in the air of an occupied apartment, the result of recent experiments and authoritative opinion seems clear that no such matter exists. Weisman [5] has ably presented the facts relating to this much debated subject and reaches what appears to be the justified opinion that "so far as danger to health from any effects of poor ventilation is concerned, the presence of sensitizing material in the breath is not a factor to which such ill effects may be attributed."

Odors may be said to be of no physiological importance, but nevertheless our sense of common decency dictates that our occupied apartments should be free therefrom, and this may best be accomplished by fresh air supply. To what extent or in what manner disagreeable ordors may have a reflex action on our physical and mental condition is now known. It may be altogether psychological, but even though this be so and the effects of odors are not physiologically harmful, they may be annoying or disturbing enough to sensitive people to warrant the use of all possible means for their elimination. The report of the first year's work of the New York State Commission on Ventilation, in conclusion 7, suggested that possibly the reduction in the appetite of the subjects in stagnant air might be due to the subconscious effect of odors. This possibility is now being experimentally investigated.

Dust as it ordinarily exists in the occupied apartment may not be considered seriously harmful. In general its bacteria-bearing proclivities go the way of the theory of areal infection. Nevertheless our desire for ordinary cleanliness will bring about the elimination of the dust nuisance to the greatest possible extent, and in no place with such care as in the hospital, for here the last degree of danger of germ-laden dust must be removed. Especially is this so because of the lowered vitality of the hospital patient.

The following by Prof. Winslow[6] is in accordance with the generally accepted view of the dust problem:

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[5] Biochemical Studies of Expired Air in Relation to Ventilation, Charles Weisman, M. S., 1913.

[6] Prof. C. E. A. Winslow, School Ventilation in New York City, Am. Jour. Pub. Health, Vol. 3, No. 2.

"We have a reasonably good basis for the conclusion that a count in the neighborhood of 100 microbes per cubic foot is entirely normal for city air, and the results reported in regard to the proportion of mouth streptococci found do not lend any weight to the belief that such air can play any part in the transmission of microbic disease. For dust particles comparatively few determinations have been reported by methods at all comparable with ours. Here, too, however, there seems no reason to conclude that a dust count of half a million to a million particles (visible under the ⅔-inch objective) indicates anything more than a normal and innocuous condition."

Many of the trade dusts constitute a really serious menace to the health of the workers, especially the hard, sharp metallic, stone and similar dusts. No phase of ventilation is of greater importance than the elimination of trade dusts by suitable mechanical exhaust systems. Many of the states have passed laws requiring such ventilation.

Concerning humidity a writer in a late issue of THE MODERN HOSPITAL makes the statement that "We must have humidity, and the amount has not been settled." In support of the first part of this statement and in apparent refutation of the second part, there might be quoted a few of the many authorities who determine the desirable degree of humidification to be substantially as follows:

Wolpert[7]	40-60%	Rubner[13]	30-60%
Oesperlen[8]	40-60%	Riepzchel[14]	30-40%
Scherer[9]	30-60%	Richardson[15]	40-60%
Paul[10]	40-60%	Shaw[16]	50%
Rietschel[11]	40-60%	Shepherd[17]	30-55%
Smith[12]	50-60%	Brefflar[18]	40-50%
Evans	60%		

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[7] Principien Der Ventilation und Luftheilung, 1860.

[8] Handbuch Der Hygiene, 1876.

[9] Aphprisnen Uber Herzung und Ventilation Der Schulhäuser, 1881.

[10] Lehrbuch Der Herz und Luftungstechnik, 1885.

[11] Luftung und Herzung von Schulen, 1886.

[12] Indoor Humidity, Am. Gas Light Journal, 1905.

[13] Archive fur Hygiene, Vol. XI.

[14] On Air Vitiation, 1910.

[15] Conservation by Sanitation.

[16] School Hygiene, 1908.

[17] Heating and Ventilating Magazine, December, 1913.

[18] School Hygiene, 1913.

In the practice of artificial humidification 30 per cent. has been regarded as the minimum and 50 per cent. the maximum for which provision must be made. The lower humidity is that provided for extreme cold weather because there exists no reason for believing that this is insufficient, because artificial humidification is expensive, and incidentally the lower humidity in cold weather prevents frosting of windows.

In explanation of the statement that humidification is expensive it may be explained that over one-half horsepower of boiler capacity, burning approximately three pounds of coal each hour, is required to humidify to 30 per cent. each thousand cubic feet of air supplied per minute in zero weather. And this is about four times the boiler capacity and fuel saved by a reduction of ten degrees in air temperature.

Professor Winslow,[19] in referring to Miss Alice L. Lake's investigation of temperature and humidity conditions in six New York hospitals, makes the following observation:

"The air of the hospitals was very dry, irrespective of the method of ventilation, sixty-three out of seventy-five records being below 40 per cent of saturation. In the operating rooms the temperature, of course, was very high (in six cases out of twelve, over 74 degrees F.) and the humidity correspondingly low (in five out of twelve cases, 30 per cent. or below, in none over 40 per cent.). It seems to me a serious question whether such dry air may not promote harmful evaporation from the exposed body cavity. Artificial humidification would not only lessen evaporation, but would diminish the cooling effect and so make it possible to avoid the extremely high temperatures now generally considered necessary."

There seems to be an almost complete unanimity concerning the desirability of humidification. And yet there is not available an iota of scientific or exact data justifying the demand for artificial humidification, or proving that dry air is harmful in any way. Data concerning this important subject is most desirable. The next year's work of the Ventilation Commission will be directed largely along this line.

The bad effects of high temperatures, especially when combined with high humidity, are well known. The experiments of the Ventilation Commission showed a reduction of work voluntarily done of 37 per cent at 86 degrees and 15 per cent. at 75 degrees, as compared with 68 degrees, all tests being made with 50 per cent. relative humidity. These tests also gave positive indications of disturbances in the regulating and circulatory systems of the body.

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[19] The Importance of Studying the Actual Conditions of Hospital Air, Journal American Medical Association, Nov. 7, 1914.

Nothing has been offered indicating the desirability of temperatures lower than 68 degrees for normal beings at rest. Occasional lower temperatures, or a variation of temperature, in hospital work are advocated by many doctors, but scientific data concerning the value thereof are desirable.

The volumetric stands of air supply heretofore in use in ventilation work find a new basis in the new conception of ventilation, i. e., that it is the province of ventilation to remove the heat and moisture produced by the occupants of the room to be ventilated. To illustrate: 30 cubic feet of air per minute per occupant has heretofore been considered the amount of air required to be supplied to maintain a certain standard of purity of air in the occupied room. It is this amount of air which is required to remove the heat and moisture given off by one person when introducing the air into the room at ten degrees less than the room temperature, which is about as low as is possible without causing drafts or a chilling of the occupants. To what extent this may be affected by different degrees of air diffusion, by different systems of ventilation, or by the conditions of the occupants of the room is not yet determined.

Air movement is now regarded as a most important element of ventilation. Stagnant areas in an occupied room mean heat and moisture accumulations to an uncomfortable degree. The well known experiments of Dr. Leonard Hill[20] and his associates have conclusively proven that air motion may go far towards preventing heat retention in the body and promote comfort in an atmosphere of high temperature. Without air movement the heat and moisture of the body will form a hot, moist so-called "areal envelope," producing all of the discomforts of a room of high temperature and humidity. But that this air movement should be produced by currents of fresh air is an assertion which seems warranted by the results of the appetite experiments of the Ventilation Commission above referred to.

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[20] Publication 2170, Smithsonian Institute, 1913.

There is a constantly lessening dread of drafts. Many of the diseases formerly believed to have their origin therein are not now so regarded. There is also a growing appreciation of the value of room perflation.

Occasionally the statement is made that air is robbed of its freshness when heated, or is in some mysterious way devitalized. Not a shred of evidence exists to support this contention as applied to a modern ventilating system. If it were so no defense of the direct radiator in the patient's room in the hospital could be made, for the temperature therein is exactly the same as the temperature within the blast coils of the indirect,or fan ventilating system. But there is believed to be no possibility of ill effect to the air in either case and both have their place.

Reasonable objections might be offered to the excessive air temperatures which were in some cases formerly used in blast or furnace systems of heating. The air from the modern ventilating system is usually introduced into the room at approximiately room temperature and never at over one hundred degrees even in systems having no direct radiators, nor does it ever come in contact with heating surfaces of a temperature of over 215 degrees to 225 degrees. At no time has it been possible, however, to find in steam heating systems .air temperature up to 400 degrees, as has been asserted, for this temperature is equivalent to a steam pressure of three hundred pounds per square inch. In defective furnace systems (and furnace systems are not now used in hospitals) or in the case of air heavily laden with dust coming into contact with high temperature surfaces (for which there is no excuse) it is possible that the air may be injured in its passage through the heaters by the absorption of gas from the furnace or by the distillation of carbon monoxide from the dust in the air.[21].

But little artificial cooling work has been attempted, and the advantages obtained therefrom have not been clearly established. The proven ill effects of high temperatures lend the subject of artificial cooling added importance. A very limited amount of artificial cooling work has been attempted in banks,[22] residences and hospitals.

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[21] Dust in Relation to Heating, Conrad Meier; Trans. Am. Soc., Heating and Ventilating Engineers, 1912.

The cost of artificial cooling is very high. In the matter of installation approximately seven tons of refrigeration capacity is required for each ten thousand cubic feet of air per minute supplied by the ventilating plant, but if the plant is especially designed for cooling purposes the amount of air used may be somewhat less than that usually supplied for ventilating in winter.

The best method of cooling is by the means of a ventilating plant containing an air washer, the water circulated therein being cooled by a refrigerating plant. If the hospital plant is large and is to, or does, include an absorption type of refrigerating plant, so that the operating force is not necessarily increased, the operating expense of the air cooling plant is small, being limited practically to the expense of the water used by the refrigerating plant (much of which may be saved and used again, for other purposes in the hospital), and oil, waste and repairs. Where a compression type of refrigerating plant is used the expense for cooling becomes much greater, the cost of cooling 10 degrees being about equal to that of heating to 70 degrees in zero weather.

Further experimentation with recirculated air has been reported during the last year by Professor Bass in Minneapolis,[23] and by Dr. McCurdy at the International Y. M. C. A. College Gymnasium, in Springfield, Mass.[24] The former, with reduced air volumes but with individual air supply, experienced difficulty with odors which the use of an air washer did not eliminate. The use of ozone had previously overcome this difficulty. Much larger volumes of air than are customarily employed were used by Dr. McCurdy, and by the use of the air washer freedom from odors was secured. A large theater in Boston was ventilated throughout the last winter with recirculated air passing through an air washer, with entire satisfaction and a marked economy in fuel.

A preliminary experiment in the use of recirculated air by the Ventilation Commission has met with difficulties from odors. Further experiments along this line are to be carried on to determine the efficiency of recirculation as a method of ventilation, the possibility of eliminating odors and the relative economy of operation. For the present no recommendation favoring recirculation may be made.

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[22] Ventilating, Heating and Cooling Plant in a Bank Building, A. M. Feldman, Tran. Am. Soc. H. and V. Engineers, 1909.

[23] Experiments in School Room Ventilation with Reduced Air Supply Through Individual Ducts, Frederick Bass, Tran. Am. Soc. H. and V. Engineers, 1913.

[24] National Physical Educational Review, 1914.

Natural, or window, ventilation is receiving more endorsement than ever, but as yet no scientific data are offered to prove that it is equal or superior to artificial ventilation. It has been especially urged for schools and hospitals.

The following is quoted from a paper by the author on "The Heating and Ventilation of School Buildings":[25]

"Usually a small class is the subject of this experiment, the class being conducted by specially selected and enthusiastic teachers; the students are given short lesson periods, ample rest periods, sleep periods and exercise periods. They are given special medical attention. Their physical welfare and mode of living are more or less subject to the care of nurses, their homes are visited to see that the best possible conditions are provided therein for the children, they are provided with medicines and furnished with special lunches. With all these helps it would be strange indeed if the physical and mental progress of these children were not remarkable. But is there any assurance therein that the progress made is due solely to fresh air, or that similar results could not be obtained in closed rooms properly ventilated?

"Experiments recently made seem to indicate that the elimination of the special diet alone lessens the results obtained in the open-air schoolrooms. What the results might be with the elimination of one or more of the other special features is not known. Whether similar results can be obtained in a closed room with a similar regime is not known.

"Manifestly a breeze can produce an air current through the windows upon but one or two sides of a building. The rooms on the other two or three sides of the building must fail to receive the proper air supply.

"It should be easier to secure proper results by selecting one capable engineer to operate a well designed and well installed system than by placing dependence upon a large number of people who have many other duties to perform and who know little of either the importance or method of operating the windows or plant to secure the best room conditions."

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[25] The Heating and Ventilation of School Buildings, Am. School Board Journal, 1914.

The following quotation is taken from Dr. James Alexander Miller's admirable paper on "Hospital Ventilation from the Point of View of the Clinician":[26]

"What, after all, is this open air on which we insist so strongly? Is it anything but the atmosphere with varying degrees of temperature, moisture and pressure in varying degrees of motion, together with certain impurities, chemical, bacterial or dust?

"Dust and bacteria in excess are always to be avoided, and certain varieties are harmful even in small amounts. In the open air as such can we adequately control these factors, and if we could, do we know just the ideal combination we would have?

"The outside air may be cold when our patients need it warm, it may be dry when they need it moist and vice versa, and, moreover, the dust problems of open windows cannot be overlooked.

"For years ventilating engineers have been asking us what condition of air we want, and we have no reply but 'fresh air.' This evidently may mean any variety of that very changeable article. It may well be that open windows are better than artificial systems, but we cannot say so definitely until we can state just what we are trying to accomplish. When this is stated the problem becomes one of engineering and economics.

"By open window ventilation are we not apt to get too much air for some patients and too little for others? Can we regulate the problem of drafts near the window and pockets of stagnant air in the corners?

"Then again it is evident that open window ventilation can never be automatically regulated. In wards this regulation would naturally devolve on the nurses, although the physicians should of course supervise it. With the multitude of other duties can we trust physicians and nurses systematically to employ the care and intelligence necessary?

"Certain it is, however, that even now the artificial system alone seems insufficient and that periodic flushing of wards with air from open windows seems reasonable and necessary. But on the other hand, it seems probable that open windows alone will be unsatisfactory.

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[26] Journal of the Am. Medical Association, Nov. 7, 1914.

"That the open air with all its variations when directly admitted to the wards may by no means always prove of just the desired condition and that its proper distribution to all points of the ward may be most difficult seems very probable. It would appear, therefore, that at present a combination of these two so-called systems is desirable, especially when we remember that in winter a heating system is always necessary and that ventilation is a natural corollary of the heating problem."

But little scientific data exist concerning the relation of ventilation to other than normal conditions of health. Reference is made to some phases thereof in Dr. Miller's paper above mentioned, under whose direction further studies are to be made by the Ventilation Commission. When the general problems of ventilation have been solved the solution of the allied problems will consist of modifications of general principles only.

To arrive at satisfactory methods of determining the effect of ventilation and its various elements is in itself a complicated problem, whether for experimental or practical purposes. The methods used by the Ventilation Commission in its laboratory work have already been reported upon.[27] The methods to be used in field work will be reported later.

A discussion of the efficiency of installation and operation of ventilating plants will be coupled with a similar discussion relating to the complete hospital plant at the conclusion of this paper.

The writer in The Modern Hospital above referred to observes that the art or science of the engineer will not go far toward the solution of some of these ventilation problems. Granted, but only by the co-operation of the medical man, laboratory expert, the psychologist, the engineer and all others interested will the most rapid progress be made, for the problem is a most complex one.

The New York State Commission on Ventilation, which has spent two years in investigation and experimentation, and has planned two years' further study, was made possible by two generous gifts from Mrs.

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[27] Results of the First Year's Work of the New York State Commission on Ventilation, Am. Jour. of Public Health, February, 1915.

Elizabeth Milbank Anderson through the New York Association for Improving the Condition of the Poor.

The members of the Commission, who serve without pay, include Prof. C. E. A. Winslow, formerly of the College of the City of New York, and now Professor of Public Hygiene, Yale University, chairman; Prof. F. S. Lee, Professor of Physiology in Columbia University; Prof. E. B. Phelps, Chemist of the U. S. Hygienic Laboratory; Dr. J. A. Miller, of the Bellevue Medical School and Hospital; Prof. E. L. Thorndike, Professor of Psychology in Teachers' College, and the author Consulting Engineer. The Commission was organized in June, 1913, formulated its plans at once and began actual experimental work about December, 1913.

Much may be justly expected to result from the work of this Commission, for it is the first and only time that adequate funds have been available to study properly this baffling problem.

As stated by Dr. Miller, the problems of ventilation become purely those of engineering and economics when standards are but agreed upon. Then, as now, the mechanical equipment of the hospital will include the following features, all but the last three or four being essential to every hospital:

Heating.
Ventilation.
Kitchen equipment.
Laundry equipment.
Sterilizing equipment.
Special warming devices.
Plumbing, including cold, hot, and sometimes cooled, water systems.
Fire protection service.
Electric system, including lighting, motors, heating devices, call system, telephones, clock systems (time and watchman), x-ray, electric baths, and special electrical equipments.
Incinerator.
Refrigerating plant.
Vacuum cleaning plant.
Electric power plant.

Manifestly a detailed discussion of all the above may not be undertaken within the limitation of this paper. General and important principles will be given, as viewed by the author.

Steam heating versus hot water heating is still discussed. Undoubtedly in the days when only the old gravity steam heating system was available the hot water system was more satisfactory, and possibly more economical. Few, if any, engineers of experience and free of manufacturing or contracting interests will assert that a hot water system, gravity or forced circulation, is the equal in low cost of installation, economy and convenience of operation, or otherwise with the modern vacuum steam heating system with its graduated control of steam to the radiators. It may be safely stated that not five per cent. of the larger buildings now being built are heated by hot water systems, and the proportion would be less except for the advocacy of the hot water system by manufacturers and contractors having patented systems or devices for forced hot water systems, and except for the further fact that there exists an ill-founded prejudice on the part of some people in favor of the hot water system.

The hot water system is subject to the danger of freezing, is slow in heating and cooling off (the forced system being less objectionable in this respect), and it involves the risk of serious damage in the case of a break in the piping, as well as possibly a serious waste of water.

Air valves (always a nuisance) are eliminated only in the vacuum steam heating system. The claim advanced that a modulation of water temperature with the outside temperature may be had with the hot water system is less real and of less importance than represented. This advantage may be approximated in the vacuum steam system, and with a material reduction in installation and operation costs. The installation cost of the best vacuum steam system will not equal the cost of a forced hot water system. And, the general impression to the contrary notwithstanding, the latter system is the more complicated.

It is a misfortune that advantage has been taken of the success and popularity of the vacuum and graduating heating systems by some manufacturers who have foisted upon the public many inefficient and cheap graduating, float and thermostatic valves which have, in many cases, brought discredit upon the vacuum heating system.

These valves are subjected to severe service and to give satisfactory service they must be heavy in every part and be constructed according to certain essential principles. In the case of the graduating supply valve for hospital work it should be so constructed that its interior may be removed without disconnection of the valve from the radiator or piping, for which purpose it should contain an auxiliary stop valve. Thus the valve or radiator may be repaired without affecting any other unit in the system.

The float valve of the best make was very satisfactory, but many of them would, under certain conditions, become noisy. The thermostatic radiator return valves (of perhaps three or four of the best makes) are most satisfactory, being more efficient, durable and noiseless. These valves should be heavy in every part, require no strainer, the valve therein should close against the return pipe connection and not against the radiator connection, and the valve should have a vertical movement of not appreciably less than one-quarter of an inch from the seat when full open. A less movement will result in holding water in the radiator much of the time.

Direct radiation is generally advocated and used throughout the hospital building, with the possible exception of the operating room in the larger hospitals, where there is little or no objection to the operation of a mechanical plant throughout the heating season. The direct radiators should be of the hospital type, having a perfectly smooth surface, with sections spaced three inches on centers so that they may be readily cleaned. The radiators should be supported from the wall by means of heavy brackets, there being a space of not less than 3 inches, and preferably 4 inches, from the wall to the radiator, and 5 inches from the bottom of the radiator to the floor. In such an installation the floor is left entirely free and dirt-collecting areas do not exist.

One of the largest hospitals recently built in the East has been equipped with the regular pattern radiators, with legs resting on the floor and branches thereto run on the floor, the radiators being set close to the wall, so that cleaning the floor under and about the radiators and the wall back of the radiators or the radiators themselves is almost an impossibility.

The plan sometimes adopted of placing the radiators in inclosures under the windows is not to be recommended. While admitting that the radiators are not easily kept clean, it is contended that the plan of concealment of the radiators offers no improvement in this respect, inasmuch as the enclousure invariably becomes foul and cannot easily be kept clean.

The type of boiler to be used in a hospital plant is entirely dependent upon the size of the institution and the space available. Too often in small hospitals use is made of the sectional cast iron boilers for heating, with an auxiliary high pressure boiler, sometimes referred to as a steam generator, to provide steam for sterilizing and laundry purposes. Such an arrangement is not to be commended, for it results in the operation of two or more fires at all times and one fire might be sufficient for all purposes for the most of the year. Also, the small sectional boilers are not economical in operation. This arrangement results in a complication of piping and equipment. The object of this plan is usually to eliminate the need of a high grade engineer, in the belief that a janitor can operate the sectional heating boilers and the steam generator. It is a small hospital indeed in which the employment of high-grade fireman will not result in a saving in fuel more than offsetting the increased amount of wages.

In larger hospitals the use of the regular horizontal fire tube boiler is to be recommended. Only in the largest of plants, that is, those requiring 1,000 boiler H. P. or over, may the use of the water tube boiler be advised, for the fire tube boiler is equally safe, economical and durable.

Automatic stokers may be used for two purposes. First, to eliminate smoke where soft coal may be used to advantage, and second, to save labor, which becomes possible only in plants of 1,000 boiler H. P. or over.

Recently more emphasis has been placed upon a study of the economical operation of hospital plants. The smallest percentage of such plants is equipped with devices enabling the determination of the economy of operation, and yet this is a very simple matter and very desirable.

The installation of coal weighing scales of the Fairbanks pattern, set in the floor, with platform 60 inches long and 48 inches wide, will enable the weighing of the coal as fired to the boiler. In larger plants a more elaborated equipment is possible. In addition to the coal scales some device for measuring the feed water as fed to the boilers should be installed, such as the Venturi feed water measuring device, or the Lea recording apparatus. This equipment will make possible a simple calculation by means of which the number of pounds of water evaporated per pound of coal fired may be determined for each day. This will give a very good line on the degree of economy with which the plant is operated. For a refinement of this determination the temperature of the water fed to the boiler may be either read systematically from a feed water thermometer, or better still, a recording thermometer may be used to record this temperature. The coal also may be analyzed to determine the heating value thereof, and then an exact determination of the efficiency of the boiler plant may be had.

To obtain the best results a plant log sheet should be used, upon which hourly readings should be recorded of the boilers in use, draft pressure, steam pressure, feed water temperature, outdoor temperature, weight of water fed to boilers, coal fired, ash removed, service rendered to the building, men on service in the boiler room, and supplies received and used. A running account of the coal may be included, this showing the coal on hand at the beginning of the day, that received during the day, the amount used during the day, the balance representing that remaining on hand. If an electric power plant is in use, corresponding records should be made of the operating details thereof.

A careful interpretation of the records thus obtained should bring about a marked economy in the operation of the plant. An instance may be cited of a 2,000 H. P. boiler plant which, previous to the keeping of such records, had operated at 51 per cent. efficiency. At the end of a year's use of apparatus and records as described, the plant was operating at 71 per cent. efficiency.

Too often the pumps used in the hospital plant are of the duplex pattern because of the fact that they cost less than the single cylinder pumps. The latter are much more economical in the consumption of steam and this becomes of importance during the non-heating season. The greater economy of the single cylinder pumps more than warrants their increased cost.

The piping system of the hospital is most complicated because of the varied service demanded. There must be, first, the high-pressure piping system operating at the maximum pressure required, which would be that required by the engine if a lighting plant is included, or that required by the laundry and sterilizer system if no lighting plant is included. Ordinarily the hospital lighting plant is operated at 80 to 100 pounds steam pressure and this would thus be the boiler pressure. The sterilizers should then be provided with an independent system of piping conveying steam at approximately 60 pounds pressure. The pressure required for the operation of the laundry apparatus is the same, but usually the laundry apparatus is so located that a separate system of piping may well be used therefor and this is desirable in any case. The kitchen apparatus requires steam at approximately 30 to 40 pounds pressure and should, therefore, be on a separate system of piping. The heating pressure, customarily 2½ pounds, involves necessarily a separate system of piping. Each of these systems is supplied with steam directly from the boiler header through an automatic pressure reducing valve.

Automatic temperature regulation fails to receive proper recognition only because a number of cheap devices have been used for the purpose and many cheap installations have been made.

There are now available two or three systems free of rubber diaphragms and similar causes of failures, and which may be counted upon to give accurate and lasting service. The use of such a system prevents overheating and results in marked economy of fuel.

There are two types of thermostats in ordinary use. The first is that known as the positive thermostat. This opens the valves or dampers wide or shuts them tight, providing a full supply of heat or no heat, and is liable to result in first overheating, and then underheating or drafts. This thermostat is not to be recommended, although it is largely used. The second is that known as the intermediate acting thermostat, which modulates the supply of steam to the radiators and the movement of the dampers in such a way as to graduate the supply of heat exactly in accordance with the demands of the rooms or the outside temperature. This thermostat is therefore to be recommended in all cases, except on radiators where a gravity steam heating system is used. The necessity of the use of the positive thermostatic control of the heat is in itself a condemnation of the gravity steam heating system and an argument in favor of the vacuum system wherein the supply of steam to the radiators, as well as the position of the dampers in the ventilating system can be modulated as required by room conditions.

In every plant steam and hot-water pipe covering is freely used, but the use of the highest grade materials is not as common as it should be. The use of the highest grade covering, which is naturally the most expensive, is amply warranted by the greatly increased saving of fuel resulting.

The use of sheet metal ducts for conveying air in a ventilating system is to be recommended in preference to the use of masonry ducts and flues, despite the fact that the sheet metal ducts cost slightly more. The sheet metal ducts are cleaner and involve less resistance to the movement of the air.

The use of air washers provides for a supply of clean air wherever ventilation is required, and this alone should be sufficient to assure their use in every case where ventilation is desired.

At a very slight extra expense humidification may also be best provided by means of the air washer. Further, the use of the best types of air washers provides for a considerable degree of cooling in warm weather without artificial refrigeration. In the case of two school rooms recently observed by the author it was found that with an outside temperature of 84 degrees a room temperature of 71 degrees was maintained throughout the day with a relative humidity not in excess of 65 per cent.

Standard air washers are made 4 feet 10 inches, 7 feet and 9 feet long. The first provides a reasonable degree of air cleansing, but little cooling; the second provides a greater degree of cleansing and more cooling; and the third provides a maximum of cleansing and cooling. Approximately the same amount of humidification may be had from all of them.

The ventilation system of the hospital may vary in its extent. It may consist merely of exhaust fan ventilation for the laundry, kitchen, toilet rooms, diet kitchens and other service rooms, which should be divided into separate systems for laundry, for the general kitchen, for the toilet and service rooms, and for the diet kitchens. This smallest amount of ventilation may be supplemented by an exhaust fan system of ventilation for the large wards, and to this may be added a fresh-air supply fan system for the wards and important patients' rooms.

The extent and nature of this equipment must be dictated by the nature and location of the hospital. A hospital located in a rural district manifestly requires less artificial ventilation than one located in a congested city district. The author believes that a complete supply and exhaust system for all of the larger patients' rooms is amply warranted in the latter case, for ventilation by natural means cannot be assured in the case of a hospital surrounded by high buildings, particularly on days of dull or stagnant atmospheric conditions, and the opening of the windows often subjects the patients to the annoyance of noise, dust and drafts.

In the case of the kitchen, laundry and sterilizing equipment a desirable medium should be secured between underequipment and overequipment, the latter often resulting from the use of manufacturers' plans and specifications for these equipments.

In connection with plumbing equipment frequently resort is had to standard plumbing fixtures, with little consideration of the specially designed fixtures and equipments which several manufacturers make for hospital work.

For the drainage system wrought iron pipe in the so-called Durham system is mostly used. For the cold water distributing mains galvanized iron or steel pipe is largely used. A more durable pipe is the lead-lined iron pipe, which costs possibly twice as much as the galvanized iron pipe. For the hot water piping system galvanized iron or steel pipe is largely used, but this should never be, inasmuch as it is short-lived. The gases liberated in the hot water attack and rapidly destroy the iron and steel pipe. Brass pipe is much more durable than galvanized iron or steel pipe, but it is very expensive. For this work, also, the lead-lined iron pipe will be found quite as durable as the brass pipe and about one-third less expensive.

In some hospitals having a refrigerating plant water for drinking purposes is cooled and circulated to the kitchens, serving rooms, diet kitchens and to drinking fountains located in the corridors. For this purpose lead-lined or brass pipe should be used.

In general, the hot water supply is furnished by means of large storage tanks containing steam coils. Considered from all standpoints, this is probably the best means. It provides for an ample storage of hot water and eliminates the sudden demands on the boiler caused by instantaneous water heaters having no storage capacity, and steam and water mixing valves. Such instantaneous heaters and local mixing valves make necessary the installation of sufficient boiler capacity to provide steam for heating and other hospital purposes and the heating of the hot water to the extent of the maximum instantaneous demand, while in the case of the storage heaters the peak, or maximum load on the boilers is lessened because the heating of the water may be accomplished through a longer period of time. The author believes the advantages of such storage heater, together with the installation of the hot water distributing mains, are greater than any objections thereto. Certainly the loss of heat in distributing the water is no greater than the loss of heat in distributing the steam to the various points where it must be used for heating water in mixing chambers. There are available mixing valves, by means of which the water may be heated by the local injection of steam, which give satisfactory results and are as safe as any mechanical device may be, but the assurance of a constant supply of hot water within a temperature assuring protection against the burning of patients may best be secured by the use of the storage tank, wherein the temperature of the water is thermostatically controlled. Where possible it is recommended that one storage tank be provided for the laundry and kitchen, where water of a high temperature is desirable, with a separate tank for the remaining demands of the hospital where water of a lower temperature is desirable, to assure the protection of the patients against burning. These two heaters may be cross connected so that either one may serve both purposes while the other is being repaired.

The demands of the hospital electric system are well understood and it may therefore be only necessary to say that the use of direct current may be justly considered essential in a hospital where motors are used, especially if such motors are used in connection with the ventilation system. The alternating current motors are inherently noisy. Direct current motors operating at a speed not in excess of 900 R. P. M. may be had, which will be free from objectionable noise.

The most desirable system of electrical distribution is the three-wire 110-220 volt system, the lighting being accomplished by the use of 110-volt lamps, while the motors are connected to the 220-volt service. In all except the smallest installations the lighting and motors should be on separate systems of wiring back to the main switchboard. In large hospitals the low-tension service required for the call system, clock system and telephones may best be provided by means of motor-generator sets.

In hospitals costing $75,000 or over the installation of a refrigerating plant is most desirable. Where refrigerators are scattered over the building the brine system of distribution is to be preferred, as it eliminates the danger of ammonia leaks, although in small buildings it is possible to install a direct expansion ammonia system without appreciable risk.

In plants requiring not over five tons of refrigeration in twenty-four hours the best type of plant is the automatic refrigerating machine, which automatically starts and stops according to the demands for refrigeration. This is a motor-driven compression type of machine. In larger plants, up to 15 tons capacity, the usual compression type of steam-driven machine may best be used. In still larger plants the absorption type of plant will be found the most economical in operation inasmuch as it may be designed to operate with exhaust steam. The cost of water for cooling or condensing purposes is approximately the same in both the absorption and compression types of machines. Provision for the use of this cooling water should be made by means of storage tanks usually placed at the top of the building. This water may then be used in the laundry and kitchen, and in some cases it may be used to advantage in flushing the water closets of the building.

Vacuum cleaning plants are less used in hospital buildings than their merit deserves. In their present degree of development they are very efficient devices, and they surely provide the most sanitary method of cleaning.

Incinerators are generally used in all large hospital plants. They should be of the high-pressure pattern and of ample capacity. A single large incinerator located in the basement is usually found more satisfactory than the smaller incinerators distributed about the building because of the fact that the smaller incinerators may not economically be operated continuously at a sufficient temperature to destroy all refuse matter and garbage without offensive odors or smoke.

Nearly all large hospitals, that is, institutions costing $150,000 or more, have their own electric power plants. No institution or type of building has greater warrant for the installation of such a plant than the hospital. It has the longest period of heating of any type of building and the greatest possible use for the exhaust steam from the engines. The exhaust steam may be used for heating the building, for heating hot water, and it may be used to a large extent for drying purposes in the laundry. It may also be used in refrigerating plants of the absorption type. The latter has the special advantage of making use of the exhaust steam at a period of the year when a considerable portion thereof could not otherwise be used. The large amount of hot water required in the hospital also provides for an unusually extensive use of the exhaust steam during the nonheating season.

A brief explanation of my reason for advocating the double use of steam, first in the engine and then for heating, may be of interest. Assuming a boiler steam pressure of 100 pounds, each pound of steam will contain 1,189 heat units when reaching the engine. Upon leaving the engine at a pressure of approximately five pounds each pound of steam will contain 1,156 heat units. Thus but 33 heat units have been absorbed by the engine, or approximately 3 per cent. Possibly five to seven per cent. more may be lost in condensation in the engine cylinders. Thus at least 90 per cent. of the original heating value of the steam is conveyed to the heating system. Practical experience has proven that exhaust steam is more efficient in heating work than live steam, so that a portion, and perhaps all, of the loss in the engine is compensated for in this way.

The heating demands of a hospital will be found to be three to four times greater, as related to boiler capacity and fuel consumption, than will the demands for electricity. The installation of the electric power plant will not in any way increase the boiler capacity required or the fuel consumption during the greater portion of the heating season. The additional amount of service required because of the installation of the electric plant is very small. In fact, in very small hospitals no extra service is demanded, in medium-sized hospitals one extra man may be required, and only in the largest hospitals will two or three additional men be required.

Usually the installation of an electric power plant will pay for itself within three to five years, including proper allowances for interest and depreciation. The extra cost of service is largely offset by the increased economy in the operation of the heating plant because of the higher grade of service employed.

Protection against interruption of service is quite as great as in the case of street service. In connection with over fifty isolated plants designed by the author no interruption of service has ever occurred and some of these plants have been in service twenty years.

It may be asserted that in no other department of hospital administration are the losses and wastes so great as in the maintenance and operation of the heating, power and mechanical equipments.

The successful design, installation and operation of the hospital plant involve a high degree of training and skill in the theory and practice of mechanical, electrical and sanitary engineering. These things are engineering problems, not medical or surgical problems. They are only remotely problems of administration. It is not to be expected, therefore, that the hospital superintendent or the hospital's business manager should be able to produce efficient and economical plant installation and operation. It is, however, unfortunate that oftentimes such expectations are entertained.

The suggestion offered by Mr. Bartine in his admirable paper on "The Building of the Hospital—Organization and Methods" that the hospital's operating engineer should be made a member of the advisory committee to the building committee is to be strongly commended. Many of these men are high-grade men of marked ability and have accumulated a wealth of information relating to the devices suitable for the equipment of the hospital plant. It is regrettable that every hospital should not have an operating engineer of this class, but, sad to relate, many hospital boards will not pay suitable salaries, preferring to save a few hundred dollars in salary while losing many times this amount in wasted fuel and depreciation of plant. The author has in mind one plant, the installation of which cost over $100,000, in which the unnecessary depreciation in the first year cannot represent less than $5,000, and the waste of fuel cannot represent less than $500 more, and all because the institution will not appropriate sufficient funds to employ a competent chief engineer at a cost of perhaps $500 above the salary now paid.

The ability of the operating engineer (and the ability of his assistants) and the efficiency and economy of the plant go absolutely hand in hand. The employment of cheap engineers and firemen inevitably means high fuel, water and repair bills and an increased depreciation of the plant.

It is not to be expected, however, that a man of such technical training and experience as to be capable of the design and installation of a mechanical plant, or who would understand the science of efficient and economical plant operation, will assume the position of operating engineer at a salary paid in such positions. The co-operation of the consulting engineer and operating engineer is much to be desired, but the varied experience and technical training of the consulting engineer is essential to assure the installation of the most durable and economical plant. Similarly the operation of the plant involves problems of fuel combustion, generation and distribution of steam and electricity, and the most efficient utilization thereof, in which theory and practice of the consulting engineer should be employed to supplement the experience of the operating engineer in order to secure the best results.

There are many consulting engineers who have personally designed and supervised the operation of hundreds of plants. It would be strange indeed if in this work they had not secured such information and experience as could be most advantageously applied to the installation of additional plants. If this experience has been largely in connection with hospital buildings just so much more valuable will it be to the prospective hospital.

The best efforts of the consulting and operating engineers may fall far short of the best attainable if the building committee or architect so reduces the amount available for the installation of the mechanical equipment that the best materials may not be used, or to such an extent that devices to determine the economy of the plant's operation must be omitted. The use of cheap valves, pipe and other materials will result in constant annoyance and high repair bills. The use of cheap steam and hot water pipe covering materials will result in an excessive waste of heat, which may be neither detected nor prevented. The elimination of coal scales and boiler feed water measuring devices will surely result in a low boiler plant efficiency. Elaboration in the mechanical equipment is to be avoided by all means, but the essential requirements may not be ignored without involving a continuous and serious expense.

DISCUSSION.

MR. O. H. BARTINE: This paper, prepared by an engineer of twenty years' experience in the design and installation of hospital equipment, as well as the equipment of school and other public buildings, gives us an authoritative statement of the present status of the problem of ventilation and also of the latest developments in the line of hospital building equipment. The author has the advantage of the most intimate contact with the latest developments in the investigations of the problems of ventilation because of his membership in the New York State Commission on Ventilation and his official position as President of the American Society of Heating and Ventilating Engineers.

The statement of the present status of ventilation would indicate a definite conclusion as to the subject of temperature to the effect that high temperatures are decidedly harmful and the maximum temperature should not exceed 68 degrees. Also, that stale air has a definite effect on the appetite, which must indicate other and more serious effects. Apparently the problem of humidity is not yet settled, nor the effect of low temperature.

All doctors, hospital superintendents and others will be interested in the outcome of the study of natural ventilation as compared with artificial ventilation. It would seem as though this paper puts it squarely up to our superintendents and doctors to give scientific data concerning the relative merits of a really modern ventilating system as compared with the natural or window ventilation system.

In referring to the new method of determining the volumetric supply of air for ventilation, it is to be noted that the figures are based on the temperature of the air entering the room of 10 degrees less than room temperature. It is quite possible, and even probable, that for hospital work 5 degrees less than the room temperature as the temperature of the entering air would be better. This would double the volume of air or provide 60 cubic feet of air per minute per patient, which would doubtless be better for hospital purposes.

The distinction between old and new ventilating systems is emphasized. It may be that we have not given sufficient consideration and opportunity to the new ventilating systems and their possibilities. Undoubtedly the old systems were subject to many objections, especially in the matter of the high temperature of the air supplied therefrom. It is worthy of note that it is stated that the temperature of the air used for ventilation should not exceed the room temperature.

The reference to recirculation of air may be interesting from an experimental standpoint or in connection with some classes of buildings, but would hardly be applicable to hospitals.

The reference to the work of the New York State Commission on Ventilation is most interesting and every person interested in this subject should lend his co-operation. I would suggest that any data obtained concerning any of the problems of ventilation should be communicated to the Secretary of the Commission, whose address is St. Nicholas Terrace and 139th street, New York City. I understand that the Commission would be especially glad to receive any information concerning artificial cooling of hospitals.

The relative merits of steam and hot water heating have been presented to us in this paper by one who has used and observed both systems and whose opinions as stated are agreeable to my own experience in hospital heating and ventilating.

Concerning the use of devices for measuring the efficiency of the plants in operation, I can say from personal experience in the new building of the Hospital for the Relief of the Ruptured and Crippled in New York City, where we have these devices in use, that they are of inestimable advantage in maintaining the operation of the plant at the maximum efficiency. We certainly could not afford to be without them.

After experience in the use of both local heaters and storage tank heaters as a means of hot water supply, we adopted the storage tank system in the new hospital referred to with eminently satisfactory results.

The explanation given as to the relative merits of the isolated electric power plant is very clear and helpful. With the information given we may readily understand why these plants are so generally used in hospital work and why they bring about the economy noted. It is an interesting fact that of the thirty-one hospitals on Manhattan Island which have one hundred beds or more, 78 per cent. of them have their own electric lighting and power plants. Of the remaining number several are city installations and the policy of the City of New York, which is believed to be largely influenced by political motives, is against the adoption of isolated plants in city institutions. The efficiency of the isolated plant in the hospital appears to be due simply to the extent to which a double use of the same steam may be made.

We can all endorse in theory, if not in practice, Mr. Kimball's argument in favor of high-grade installation and intelligent operation. Nothing means inefficiency and waste to such an extent as cheap labor.

Acting-President: The paper is open for discussion.

Mr. Stevens: I do not want to prolong the discussion, but there are just one or two points which might be useful from the experience of an engineer, and that is along the line of simplifying the heating and ventilation and making it as nearly as possible indirect. Of course, we all know that the direct radiator gives us much heat, but the question comes up of how can we use that direct radiator and still get fresh air. The direct-indirect radiator, so-called, as now put on the market, is a cumbersome thing with more or less dirt-collecting surfaces. So I had my engineer devise a simple shield to be put on the radiator which prevents a direct draft, and then by simply cutting a hole properly, getting the fresh air directly against the radiator, this making it a simple direct-indirect. I think it is most important, at least, it has been in the institutions in which I have been interested, to ventilate the rooms thoroughly. I think it is easy to get the air in, because it comes in if it is pulled out of the patient's room, so I believe the point of getting it out is to be looked after. Another point which might be touched on is the heating of operating rooms. One hospital in which I am just working out that problem, I am arranging in this way: I am putting the heat behind marble slabs, so as to get no dust-collecting surfaces in the operating room. I found out from data which I secured in Washington that about fifty per cent. of the heat will penetrate marble, that marble was found to have the greatest conductivity; and in that way, we can simply hide our radiation and by doubling the amount of surface we get the same amount of heating. Of course, we should have fresh air, and in this particular case I have taken care of that by double windows to the operating room, putting the radiation between these two windows.

EFFICIENCY AND PROGRESS IN HOSPITALS.

By Mr. Howell Wright,
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This paper has to do with efficiency and progress in municipal hospitals in this country. It lays emphasis chiefly upon hospitals owned and operated by the city and the county, individually or jointly, and supported by taxation, with mention of so-called private hospitals receiving fees or appropriations from the municipal or state government. It is not a "survey." Rather it seeks to point out on the one hand some of the many hopeful instances of progress, and on the other hand some of the causes for the serious failures in municipal ownership and operation of hospitals, with suggestions to eliminate such causes.

At the Detroit meeting of the American Hospital Association in 1912, Dr. Henry M. Hurd in his President's address spoke of the functions of a municipal hospital as follows:

"A stricter line of demarcation should limit the sphere of activity of the municipal and voluntary hospital. The municipal hospital should be re-organized, whenever it is necessary, to afford proper care for all cases of chronic diseases among dependent patients and for cases which come under the police powers of the city—cases in which the right to restrain them in quarantine or to isolate them or to enforce hygienic requirements must be exercized."

Surely, Dr. Hurd or the American Hospital Association will not agree to limit the sphere of activity of all municipal hospitals to the care of chronic dependents and patients requiring quarantine or isolation—even though isolation be made to include the shamefully neglected cases of acute syphilis and gonorrhea. Unfortunately this is the limit of action now in too many cities, and too often the action, or inaction if you prefer, consists chiefly in running a boarding house or infirmary for chronic dependents. Dr. Hurd must have urged this line of demarcation and limited sphere of activity as the least any municipal hospital can do and do well for the sick and maintain its selfrespect.

The interests of humanity demand a far greater sphere of activity for the modern municipal hospital. This paper assumes for its major premise, and I hope the American Hospital Association will subscribe to it, that a municipal hospital is an institution of organized society provided by a city to care for the sick. It is but a medical means to a social end, and this end—public welfare—must never be forgotten. The modern hospital has outgrown the narrow field of boarding and treating sick people, and the time has come when a proper city hospital can no longer passively receive the sick from the community at large, without regard for the reason why they became sick, use them chiefly as material and often discharge them without the slightest interest in their convalescence and rehabilitation in wholesome living and working conditions. Hospitals more than any other social agency accumulate the evidence against the dangers to life in the community, dangers from contagion, from ways of living and from industry, and they must feel the responsibility to study this evidence and become leaders in the progress of prophylactic medicine. The idle convalescent is of no more value in a community than the bedridden and scarcely less expensive to support. It is not only charity and social service but also sound economy for a city to supervise convalescence; to make it such that the patient can return to his work the sooner. A city hospital of today must continue to give to a community scientific care for its sick and must afford opportunities for the education of physicians, nurses and orderlies. But above all, it must, through its social service work and through co-operation with all other community social agencies, give a watchfulness over public health and results that are more days of life, work and happiness to its citizens. What then have the cities of this country to offer in municipally owned and operated hospitals actually serving or planning to serve these broad purposes?

SOME INSTANCES OF EFFICIENCY AND PROGRESS IN MUNICIPAL HOSPITALS.

Considering that it is now the recognized duty of the city to care for the sick poor and to protect the public health by quarantine and isolation of contagious and infectious diseases, including syphilis and gonorrhea; considering the limited number of free beds in so-called private hospitals for the great numbers of sick needing scientific treatment and unable to pay for it in practically all American cities of any size; considering that it is the recognized duty of the state to afford opportunities for the education of physicians and nurses; and further considering that in many of our cities of over 100,000 population there are numerous acceptable medical schools, each eager to graduate well trained physicians, each eagerly seeking opportunities for the study of such forms of disease as municipal hospitals alone can and should offer; considering the lack of adequately trained nurses throughout the country; considering the needs for hospital social service, out-patient and dispensary work for the sick poor; in consideration of all these opportunities there is not nearly enough to offer in the way of efficiency and progress in municipally owned and operated hospitals, not enough to be in proportion to what believers in popular government have a right to, and do actually, expect from them.

Two splendid examples of long continued efficiency and progress are recognized in the St. Paul City and County Hospital and the Boston City Hospital. The former owes its leading position to the personality of one man. The history of the St. Paul City and County Hospital is the life and history of its present Superintendent, Dr. Arthur B. Ancker. The Boston City Hospital, which has been generally considered the best in the United States, may fairly be said to owe its position to state legislation which created its present form of organization and control and which materially lessened the opportunity for political interference. But even in this hospital, I am informed, it has been possible for a new mayor's personal family physician, an untrained hospital administrator, to be appointed as superintendent. The result is awaited with great interest, but judgment should be suspended and the new appointee given a chance to show his ability to keep the reputation of the hospital up to its recognized high standard. There are also many hopeful instances of more recent progress in cities large and small in widely scattered sections of the country. In 1913 at the American Medical Association meeting the late Dr. Rupert Norton said:

"The new Bellevue Hospital in New York could in a few years become a noteworthy institution, but there are many conditions which stand in the way of its development along the best lines possible."

Those of us who are familiar with the report of Mr. Henry C. Wright on Bellevue and Allied Hospitals believe that he has pointed out many of these hindrances, and are wondering what New York is going to do about it. No one would question the statement that Mr. Wright's report and recommendations are indications of efficiency and progress. When any municipality questions the efficiency of its ownership and operation of hospitals it is a hopeful sign. It is reported that some of his excellent recommendations have been and are being carried out. But we are waiting to see what is to be done about the recommendation to re-organize the professional work of Bellevue and Allied hospitals and to place the control of all the municipal hospitals in that city under one head. Further efficiency and progress in New York hospitals based on such a progressive investigation and report will be an inspiration to other cities in this country.

Municipal ownership and operation of hospitals in St. Louis has received greater momentum in the new form of city government which became effective August, 1914. The City Hospital, which cared for 17,000 new patients in 1914, has re-organized its professional work. It is affiliated with Washington University and with St. Louis University, and two sections of the visiting staff from these two medical schools represent the teaching force of the hospital, while there is a third section representing the profession-at-large. The house staff is also being re-organized, dividing the internes between medical and surgical services and permitting them to select either one as a major with minor services in the other branches of medicine. Effective on January 1st a three years course for nurses was inaugurated and a new curriculum adopted which embraces every phase of nursing education. It is believed that this re-organization will not only provide the highest standard of medical care for the sick, but will enable the hospital to fulfill satisfactorily its obligation toward the problems of medical and nursing education. Definite plans are being made to increase its laboratory facilities, but most important of all to develop its relations to the community through a Social Service department.

There are many other hopeful instances of progress along broad lines, including the Denver City and County Hospital, the Richmond, Virginia, City Hospital, the Los Angeles County and the San Francisco City and County Hospitals.

But I wish to speak at greater length of one, namely, Cleveland City Hospital. While I am connected with it, I can safely speak at length of its recent development because it began before my connection with the hospital and is due to the efforts of Dr. Harris R. Cooley, the present Director of Public Welfare, who separated the Infirmary from the hospital, and to the energy and personality of our present mayor. It is a typical example of what can be accomplished in a short time in any city by the united efforts of two strong forces, namely, the city administration and a united, representative group of the medical profession.

In the fall of 1913 it was considered necessary to reorganize the professional work of the hospital. It seemed an opportune time to do so for several reasons. The first units of a $3,000,000 hospital were under construction. The old short term, divided visiting staff service was becoming less effective. Two of the medical schools providing part of the service were gradually going out of existence, and there was a growing belief throughout the community that the hospital was not serving the full purposes for which it was intended. Accordingly a plan of affiliation with Western Reserve Medical School was worked out and became effective the first of February, 1914. It provides for the nomination of the entire hospital visiting staff by the trustees of Western Reserve University and appointment by the City Department of Public Welfare. All of the professional work of the hospital is centered in two divisions, Medical and Surgical, each in charge of a Division Chief. Under each Division there are grouped the proper departments, each in charge of a department head. The division chiefs and the department heads are on duty the entire year. This plan has many advantages. It places the responsibility for the professional care of patients. It insures working efficiency and co-operation among departments. It provides a continuous service which in turn makes possible definite plans and policies in the treatment of patients and uniformity in the teaching of house officers, in the training of nurses and in the keeping of charts and records. The full value of a teaching staff has been recognized, but at the same time the city, upon the nomination of the university trustees, has appointed physicians and surgeons on the staff who have no university connection. The entire visiting staff comprises thirty-eight persons, and of this number twelve have no connection whatever with the university. The interests of the hospital demand that full responsibility for professional care be centered in the division chiefs, allowing teachers and independents to be on service throughout the year under the direction of the division chiefs.

The house staff has also been re-organized, the rotating service shortened and improved and paid resident physicians and surgeons provided. Students are taught in the clinics and laboratories, and there is a regular service for clinical clerks in the ward laboratories.

The school for nurses has been thoroughly re-organized. Adequate salaries have been provided, making it possible to secure a high grade superintendent of nurses, an assistant, an instructor of probationers and a trained teacher to give instruction in theoretical and practical nursing. Paid head nurses have ben provided for every division of the hospital. The number of pupil nurses has been raised from 75 to 110, and better facilities in the way of demonstration and class rooms have also been provided. It is planned to raise the educational requirements for admission October 1st, 1915, to a full high school education or its equivalent, and to put the nursing work on an eight-hour-day basis. While the hospital provides opportunity for nursing work in the medical and surgical wards in obstetrics, pediatrics, mental cases, contagious diseases and in tuberculosis, definite plans are under way for an exchange with certain private hospitals to give our nurses opportunity to nurse private patients.

The laboratory facilities have been greatly improved. A central laboratory together with a new autopsy room and morgue has been established in a brick building centrally located and originally used as a contagious hospital. In addition we now have eight small, compact ward laboratories in the different divisions of the hospital, for ordinary routine procedures. The university has also provided an electrocardiographic laboratory for the diagnosis and study of cardiac cases. All of these modern laboratory facilities are affording excellent opportunities for diagnosis and for scientific treatment of the sick. They are a substantial basis for possible future development.

The first units of the proposed $3,000,000 group have been occupied, namely, the administration and the service buildings, the nurses home, the laundry and the stable, while the power plant will be completed on the first of September. As the contract calls for the completion of the hospital without decreasing the bed capacity, it was necessary to build these units first. Their occupation has vacated space for beds in the old hospital buildings, consequently the capacity of the hospital has been increased from 500 to 650, and with the occupation of the new Venereal hospital it will be further increased to 800 this year. From now on every cent appropriated can be utilized for new hospital beds and equipment, and it is a part of the plan to build pavilions as required each year, anticipating the completion of the hospital group by 1920.

Mayor Baker is unwilling to endorse a narrow sphere of activity for Cleveland's city hospital. He believes that patients must be treated in the institution with regard for the reason why they became sick and that it is the duty of the hospital to supervise their convalescence and return them to wholesome living and working conditions. In other words, he believes that a city hospital must exert a watchfulness over public health and through its own social service department and through co-operation with all public health agencies produce results that are more days of life and work and happiness to citizens of the community. Consequently, greater emphasis has been laid upon developing the social service department of the hospital. With a limited number of workers and a limited amount of money it has not been possible to serve all the purposes for which this department is intended. However, some splendid results have come from following up our discharged patients through co-operation with such agencies as Public Health Nurses, the Babies' Dispensary, the Humane Society, the Associated Charities, and the dispensary at Lakeside Hospital.

There has been comparatively little opportunity to supervise convalescence even though sadly needed, because the city has been obliged to economize. As in other municipal institutions it has been necessary to use beds needed for acute cases for convelescent patients.

The city has an opportunity to develop excellent accommodations for convalescents on its great Warrensville Farm, and every effort is being made to secure such accommodations at the earliest possible moment. Indeed, it should be considered as a part of the plan to economize, for it now costs us $1.50 per day to care for convalescents in our hospital, while they might be cared for at 50 cents a day at the Warrensville Farm in small convenient cottages and restored to their homes and work the sooner.

All of our mental patients sent to us for observation should be sent to the Warrensville Farm, where they might have opportunities for work and recreation and a chance to forget their troubles. As our accommodations for convalescents develop, the term "convalescent" can be made more and more elastic. In time it would include a patient who has been operated upon for appendicitis and could not go back to his regular work for two or three weeks, but could go to Warrensville in a week; a maternity case that ought not to go home for three weeks but could go to Warrensville on the ninth or tenth day; and patients with communicable diseases could go to isolation wards at Warrensville as soon as the fever period is over. Children suffering from nephritis and certain diseases of childhood that mean months or years for recovery (if they recover at all), and chronic bone diseases of childhood, should be included eventually. No municipal hospital service is on a high plane of efficiency unless it includes provision for the scientific supervision of convalescence, and Mayor Baker means that Cleveland shall render such service at the earliest possible moment.

There will be still further opportunity for social service when our new 150-bed department for acute cases of syphilis and gonorrhea is opened this year. This department has been made possible by the remodeling of our old nurses home building at a very small cost. It is in line with the most advanced principles advocated for the care of such cases and in harmony with the newer and broader ideas of public health work.

Brief mention must be made of that group of hospitals in this country of a more or less private nature, receiving fees, contributions or appropriations from the city or state. Such hospitals are found in New York, Philadelphia, Baltimore, Pittsburg, Detroit, Buffalo and many other cities. One hospital of this type, however, which ought to be mentioned in particular is the New Orleans Charity Hospital. It is a 1,000-bed hospital, affiliated with Tulane University Medical School, and its present superintendent, Dr. C. G. Wilkins, is responsible for its recent splendid progress along modern lines, in the face of many difficulties. Much has been done to put the physical properties in better condition. Various changes have been made, placing the hospital in a far better position to meet its obligations toward the problems of medical and nursing education, and a social service department has just been inaugurated.

There are other hopeful signs of progress in municipal hospitals, but in a thirty-minute paper it is possible to touch only the high spots.

The material that I have gathered within the last two years and my own personal experience during that time leads me to believe that there are certain definite preventable causes for serious failures in municipal ownership and operation of hospitals in the United States.

SOME CAUSES FOR SERIOUS FAILURES IN MUNICIPAL OWNERSHIP AND OPERATION OF HOSPITALS IN THE UNITED STATES, WITH SUGGESTIONS AIMING TO ELIMINATE SUCH CAUSES.

One great cause for most of the serious failures in municipal ownership and operation of hospitals is the failure of two important factors to get together, namely, the City Hall, containing the administration elected by the people, and the Medical School, if there is one, or some medical society representing the medical profession. Each represents powerful constituents. Each wields a great influence over public opinion. And the medical profession thus represented in any given city in the United States, whenever a municipal hospital has been planned or re-organized, has it in its hands to make or mar that institution. There are but few cities in which the proper city officials have not turned to the medical profession for guidance, assistance and instruction whenever they have been concerned with a problem of caring for the sick and particularly the hospital problem. Too often the failure of the physicians to lend wise assistance has been due solely to their inability to forget their own professional political difficulties. And when conscientious city officials have worked out a constructive plan jointly with intelligent elements of the medical profession in any given community for the institutional care of the sick, has not some misguiding faction of the medical profession immediately, before waiting to give the proposed plan a trial, passed resolutions condemning these officials for playing politics or other resolutions complaining that they personally are going to be deprived of something to which they think themselves entitled by "divine right of the profession."

In the construction of municipal hospitals responsible city officials have repeatedly failed to select competent architects or to associate with them practical hospital experts to draw the plans, with the result that many municipal hospitals, as far as construction is concerned, have failed absolutely to serve the purposes for which they were intended. Hospital construction is a science, and the ordinary run of city architects, or local architects for that matter, know less about the construction of modern hospitals than the average board of health in a country town.

The failure of some American cities to have proper municipal hospitals or to have any at all is often due to the mistaken notion of city officials that the cheapest and best way to care for the sick poor is for the municipality to pay somebody else to do it, and the medical profession has not been slow in some cities to advise and approve this plan, generally known as the subsidy system. In some states subsidies to private hospitals are paid by the state government, in others by the city. A careful study of this plan will not convince thoughtful citizens that it is either the best, or in the end the cheapest method either as a temporary expedient or a permanent policy.

The city of New York, in 1914, through the department of Public Charities cared for 48,244 patients in 5,793 beds. In private hospitals there were 40,480 patients treated in the same year at the expense of the department. Anyone familiar with the troubles of the department of Public Charities in New York in trying to control payments to private institutions might incidentally find an additional reason for the high cost of municipal government. People familiar with the facts in the state of Pennsylvania will not question the statement that the subsidy system in that state has been the cause of wholesale political scandal and extravagance, even though a remarkable chain of hospitals has been developed throughout the state. It is generally known that the "mouths of some of the most public spirited citizens in the state are absolutely sealed, and any action on their part against the most flagrant offenses of a corrupt political organization is estopped by this system of grants of state money to private institutions." Subsidies to hospitals may be necessary under strict regulation for a long time to come in some of our older and larger cities, but should be consistently avoided in newer and smaller cities as against sound public business policy in caring for the sick. In some cities as in Buffalo arrangements are made by the city with private hospitals for the care of city cases at low rates. Often the amount paid is only half of the expense, and frequently the comment of the private hospital is, "It is better than receiving nothing." Subsidy agreements are often the basis of much misunderstanding and result in greater cost to the city, especially when the burden is placed upon the city of proving that patients received and cared for by the private hospital are not legal charges upon the city. Under such arrangements the private hospital makes less effort to fix responsibility for payment upon the patient himself or his relatives, because it knows it will get something from the city. Under the lump sum subsidy plan interesting situations arise in some of the smaller cities. In Toledo, Ohio, the superintendent of one of the private hospitals says: "We with two other hospitals bear the burden of the care of city patients at a great loss in dollars and cents, because of the small appropriation allowed us, and it is only a question of time when the municipality will be compelled either to appropriate sufficient funds for private hospitals to care for their patients without a deficit or to maintain a municipal institution." On the other hand it is reported in other circles that there is decided opposition among the controlling forces of the private hospitals to the building of a municipal hospital. The city of Dayton pays $56,000 annually to two private hospitals, divided equally between them, although the city absolutely has no voice in the administration of either hospital. On the other hand the health department has been anxious to establish a city hospital for the treatment of contagious and preventable diseases, but reports that "both of these institutions have fought us so as to defeat our plans," and further states that department heads never had any co-operation from the institutions until recently; that one of them grudgingly takes measles and diphtheria cases at the request of the health department and the other one grudgingly takes whatever infectious cases are sent; and that efforts to use these two institutions as educational centers have been defeated by cliques in the medical profession.

The greatest hindrance and danger to efficiency and progress in municipal hospitals is found in the method or plan of administrative control. There are **too few** instances of the one plan of administrative control of municipal hospitals which will now in the average American city more often insure long continued progress, and herein lies an additional reason for the high cost of municipal government. There are **too many** instances of city hospitals being a part of the changing city administration. In cases where the superintendent is appointed by the mayor or by some other executive of the administration whose existence in official political life is dependent upon the vote of the people, opportunity for long continued progress and efficiency rarely exists. In such cases rotation of office means rotation of hospital superintendents, with frequent change in essential hospital policies and with the result that our city hospitals and the sick entrusted to their care are placed in the hands of a series of perfectly green and inexperienced officials. To repeat the process of placing the active authority and direct control of city hospitals in the hands of such officials, and to repeat the expensive and tedious process of developing them, whenever they can be developed, to the point of grasping even the essentials of modern hospital management is to close our eyes to the recent rapid progress in the work of hospitals for a community and make it forever impossible for many of our municipally owned and operated hospitals to advance beyond an elementary and experimental condition. And I know full well from personal experience what it costs a city and all concerned in time and in money for perfectly green and inexperienced officials to undertake the problems involved in managing a municipal hospital. While a combination of an intelligent executive with the best element of the medical profession in a given community may result for a time in substantial progress, the immediate hope of the municipal hospital in this country lies in placing the active administrative control in the hands of a non-partisan board of trustees properly connected with the administrative and legislative branches of the municipal government so as to prevent it from becoming isolated from other public welfare activities. No other plan will now assure the average American city of the benefits of the accumulated experience and judgment it has purchased and will purchase from time to time at great cost, and make possible continued efficiency and progress of its hospital and the service it renders. However, when public office becomes a public trust in the average American city; when the average mayor and his cabinet in the average American city are, by reason of education, training and experience, public welfare workers with higher businesslike ideals for the development of the city's welfare activities, and are continually elected by the people on this basis, then non-partisan boards of trustees for municipal hospitals will not be necessary, because every change in a city administration will not necessarily result in change of competent hospital officials and essential hospital policies. This is the ideal for which we must work. And it will come about only as citizens interest themselves in their muncipal government as a whole. Then efficiency and progress in municipal government will be synonymous with efficiency and progress in municipal hospitals.

Hospital administration is a business and a science. While there are both competent professional and lay superintendents, there has been a tendency in the past to select either untrained doctors or laymen as hospital managers, with results not always satisfactory. And again there have been too many instances of failure of city administrations to place the authority and responsibility required in the hands of the hospital superintendent to promote efficiency and economy. It is a fixed principle in the modern hospital that the superintendent must have definite rights and responsibilities, including direct responsibility to some one constituted authority for the general management of the hospital; full authority to appoint and remove all employes of the hospital, including assistant superintendents, resident physicians, the head of the training school and all other departments and their subordinates. All of these officers and heads of departments must be wholly and directly responsible to the superintendent. He and his assistants must have absolute control of all admissions to the hospital and the final discharges. In other words, as the manager of a big business corporation he must be given authority consistent with the importance of the position he holds, and it must be so understood by all concerned if he is expected to produce results. Yet states and municipalities continue to increase the high cost of municipal government in the administration of hospitals by passing laws and making charters with provisions which unnecessarily divide authority and responsibility among too many officers. Too often the laws or ordinances governing the administration of hospitals make the position of a municipal hospital superintendent essentially that of chief clerk. All of the authority he should have for the general management of the hospital is often placed in the hands of some officer in the city hall removed from the seat of operation. In Ohio under the old Payne law all the authority for the management of municipal hospitals is vested in the director of Public Safety. Regardless of civil service he can make the superintendent what he wants him to be or make him resign. And as administrations change director, superintendent and essential hospital policies change. Cincinnati's great new hospital is operated under this law. On the other hand, the St. Paul City and County hospital, with almost no changes in competent hospital officials and essential policies, has continued to give high grade service to the community and is now doing so at a per capita cost of $1.25 per day.

In the future city authorities must learn to recognize that they cannot hold their hospital administrator responsible for scientific management unless they give him certain additional authority. They cannot hold him responsible for economy, for scientific saving, for the elimination of waste, unless they give him some voice in the purchasing of hospital supplies and equipment. They must learn to recognize that they are contributing further to the high cost of municipal government when they create a central purchasing department, which is sound business in general, but equip it with inexperienced, low salaried purchasing agents; give them full authority to purchase medical and surgical supplies, instruments and apparatus; to take their own time about it and to make the hospital take any kind, any make or any grade regardless of experience and specifications. In some cities it would take the services of a $5,000-a-year specification clerk to insure the hospital of getting what is ordered and needed. The Providence city hospital seems to have a satisfactory arrangement so far as the purchasing of supplies is concerned. There are only three contracts made by the city under which the hospital comes, namely, contracts for coal, printing and ice. In the purchase of other hospital supplies and equipment the superintendent has a voice, as he must, if he is expected to promote economy.

Another reason for failure of many municipal hospitals to serve the purposes for which they are intended, and incidentally another expensive contribution to the high cost of municipal government, is their almost complete failure to provide accommodation for convalescent patients and to supervise their convalescence. This has been quite general in the existing hospitals throughout the United States, although there are hopeful signs of improvement in the larger cities such as New York, Chicago, Philadelphia and Cleveland. In the smaller cities even the hospitals that have progressed along other lines have been slow to recognize this responsibility. Such cities as St. Paul, Kansas City, St. Louis, Denver, Memphis, Cincinnati, Louisville and Milwaukee have done compartively little through their municipal hospitals to place convalescence on a scientific basis. Let any city study carefully its municipal hospital accommodations for acute cases, the cost of keeping them, the opportunities to provide accommodations for their convalescence on the hospital land, on the infirmary or almshouse land or other land the city owns or can purchase; the comparative cost of keeping them in special quarters; and it will soon find that it will cost less and benefit the patients more to supervise their convalescence on a scientific basis. Let some intelligent group of taxpayers get this thoroughly in mind and they will gently remind some backward city administration that they prefer to support the poor as convalescents at 50 cents per day than intermittently as acute cases at $1.50. And some taxpayers are beginning to inquire as to how their money is spent for the care of the sick.

Extended inquiry throughout the United States warrants the statement that civil service as generally applied has contributed little toward scientific management or to the advancement of medical and nursing education in municipal hospitals. There is little objection to the selection of the chief hospital administrator through high grade, competitive civil service, but when such an official is so chosen, it is generally conceded that it is not only a hindrance to efficiency and progress but contributory to the high cost of municipal government, to delegate his authority in any degree whatever, to a supervisory body with control over the conduct and management of the hospital in the form of what some enthusiasts call an "employment bureau." In the modern hospital world it is generally recognized that managing a hospital is largely the science of mixing many competent personalities. The success or failure of a hospital manager is often determined by his ability to mix and fit such personalities. How can this all important, human element receive proper consideration at the hands of any sort or kind of "employment bureau"?

It is admitted by some enthusiastic advocates of civil service that it is unwise, unnecessary and expensive to hold civil service examinations of any kind for hospital nurses or physicians, who must be registered by the state before they can perform the professional duties for which they have been trained. In some cities it is found that civil service has not been and probably will not be of any great assistance in the selection of that great group of employes commonly called "hospital helpers." And in the selection of the two remaining classes of hospital employes mechanics and clerical assistants—civil service is declared in many cities to be of doubtful value. Obviously in consideration of such facts there is but one promising line of action. Select high grade administrators, select them through competitive civil service examination if you will, and then give them an absolutely free hand in appointments, if greater efficiency and progress is expected in municipal hospitals.

Finally, the medical profession and municipal hospitals must be brought together more closely, primarily in the interests of the sick. One cannot render the highest service to the community and the public welfare without the other. The best element of the medical profession in every city must not only understand that the municipal hospital must provide scientific care for the sick and must fulfill its obligation towards the modern problems of medical and nursing education, but also that municipalities will not build municipal hospitals just to give every doctor in the community, regardless of his ability and training, an opportunity to treat the sick. On the other hand municipalities must now through nonpartisan controlling boards take their hospitals out of politics and keep them out of politics and co-operate with medical schools and medical societies in picking the best men for the hospital staff, and provide them with modern facilities with which to treat the sick and to study disease in return for services rendered. A new era is dawning in municipal ownership and operation of hospitals in this country, and such co-operation cannot fail during the next ten years to bring wonderful progress.

REPORT OF SPECIAL COMMITTEE ON BUREAU OF HOSPITAL INFORMATION.

The Committee has nothing to report in the way of progress during the past year. Since the decision by the authorities at Washington that the Department of Public Health and Marine Hospital Service has all the powers necessary to establish such a bureau, and that a special bill authorizing the same was therefore unnecessary, attempts have been made by the Department of Public Health and Marine Hospital Service to get a special appropriation to cover this work. Thus far, these efforts have been unsuccessful.

It is the opinion of your Committee that considering the lack of interest on the part of the authorities at Washington, it is extremely doubtful if a bureau established under the authority of the Department of Public Health and Marine Hospital Service would really serve the purpose which was originally intended. Your committee still feels that there is need of such a bureau, although much of the information which formerly was entirely lacking, is now being supplied by the new hospital journal, "The Modern Hospital."

Your Committee advices that during the coming year due consideration be given to the formulation of plans for the establishment of a Hospital Bureau under the auspices of the American Hospital Association, and that a special Committee be appointed to furmulate such plans.

Dr. Winford H. Smith, Chairman,
Dr. S. S. Goldwater,
Dr. Henry M. Hurd,
Dr. John O. Skinner.

DISCUSSION.

Acting-President: What is your pleasure with regard to this report.

Dr. Warner: I move that the report be accepted and spread upon our records.

Seconded. Approved.

Acting-President: In order to get through with out business, it will be necessary to make some changes in the program. I would, therefore, call upon the Chairman of the Committee to Memorialize Congress to Place Hospital Instruments on the Free List, Dr. Clover. Is he present? I have never received this report and wonder if any one present has it. As it appears not, we will proceed with the reading of Dr. Washburn's paper.

MEDICAL AND SURGICAL EFFICIENCY IN LARGE GENERAL HOSPITALS.

By Frederic A. Washburn, M.D., Resident Physician,
and John F. Bresnahan, M.D., Assistant
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Large hospitals as a rule are well organized and effective in their efforts for the welfare of the patients. Were this not so, it would have been difficult for them to have become large or to remain so. The modern ideal, however, demands something more than merely maintaining a high standard of organization; it demands intelligent contributions towards the prevention of disease, towards the after-care of the sick, and towards the social aspect of a "case," both as to the patient's family and to himself.

The modern hospital is coming to be looked on as a laboratory to study these questions of increased efficiency, and such an institution only does its full duty when it contributes its results to the common fund of what may be termed "hospital knowledge." It is with this thought in view, that we offer something of what has been attempted along these lines of efficiency at the Massachusetts General Hospital during the last few years.

Before speaking, however, on these aforementioned topics, we would describe a few of the methods we have found of value in striving for more thorough work.

Some four years ago our surgeons realized that to obtain the best results, greater specialization in their particular field was necessary, and accordingly a system of special assignments of cases, to certain men, best qualified to operate for the particular malady in question, was devised. In other words, patients requiring gastric surgery were assigned to one surgeon; those suffering from carcinoma of the uterus to another; the prostatic hypertrophies to still another; and so on. The results have been encouraging. The mortality percentage has not only been lessened, but more difficult cases have been successfully accepted by the operators, as they have become more familiar through constant practice with the difficulties of their especial operative divisions.

Another innovation made recently by our surgeons is what is known as "fracture cards." When a patient is discharged from the wards of the hospital to the out-patient department for treatment of a fracture, a card containing details of the cause, treatment, and x-ray results of the fracture is made out by the house officer on duty in that particular ward. This is filed in the out-patient department record room, and all subsequent data is added by the out-patient physician. This system of cards not only gives the out-patient physician complete and accurate data upon which to work out their after treatment, but also forms a complete and permanent record of all fracture work done in the hospital, and can be used not only for statistics but to bear out any points of treatment which the surgeon may wish to emphasize when writing a paper. In other words, it epitomizes in accessible form all fracture work.

On the medical side of our hospital "the special assignment plan" has been only tentatively tried, but the indications are, that before long, our medical men will realize as strongly as our surgeons do now, the value of special fields for special men. We have at present in the hospital a young physician who has devoted himself for the past few years to the more scientific methods of heart study. An electrocardiograph has been installed, and his expert services in the finer grades of heart diagnoses are in constant demand. We have found that while these refinements of highly accurate diagnosis do not materially affect the treatment, they have considerable bearing upon the prognosis; and that, after all, is a matter of great importance to the patient.

An attempt at refinement in diagnosis has been made by the co-operation between our surgical and nerve department in emergency cases of head injury. When a man with a question of cranial injury is brought to our accident room, he is seen in consultation by one of the younger men of the nerve visiting staff. This consultation has proved of considerable value to the operator, for it enables him to open the skull at the point which can be perhaps more properly determined by the nerve specialist than by the general surgeon.

A rather novel method of "checking up" difficult diagnoses has been tried out by our visiting staffs with considerable success. On Wednesday at noon of each week the combined house and out-patient services unite for a ward visit which is limited in time to one hour. During this visit the difficult cases are brought out, and the history and physical examination read aloud by the physician in charge. Each doctor present is then required to write on a slip of paper his diagnosis and the reason therefor and to sign his name. These slips are then collected and read out by the physician in charge of the case and a short discussion follows.

In our department of social service a constant effort is made towards increasing the efficiency with which a patient is handled, not only from the socio-medical point of view, but also from the socio-familial and the socio-occupational point of view. The field of social service is so broad and has so many ramifications that unless one is careful, one's efforts are dissipated, owing to the size of the problem. Our care, therefore, has been to concentrate our energies along a few broad lines.

An interesting detail of efficiency along one of these lines is illustrated, perhaps, by the co-operation between the social service and the dietitian of the hospital, in the attempt to send out patients requiring special diets, with a definite idea as to just what they should eat after leaving the hospital. We have had printed diet lists made which are given to our diabetic, nephritic, and gastric patients. They are given careful personal instruction by our dietitian and social service worker as to what they must do to keep well. They instruct the patient in detail as to the proper method of estimating the correct amount of carbohydrate, protein and fat to be eaten daily. In difficult cases a collection of menus is given to the patient. This has proved of inestimable value in making life worth living to the diabetic who is condemned for years to what would be an extremely unpalatable menu, were it not for the instructions which ensure a variety in form and taste which can be supplied by the experienced dietitian. This form of instruction alone would probably be of little value, were it not for the faculty of the experienced social worker in seeing that the interest of the patient's family is enlisted towards carrying out the program. Those in charge of this work report very encouraging results to their efforts; for it is found that most patients take sufficient interest in themselves to write at regular intervals and explain as to how they are getting along and as to whether or not they keep sugar free. The fact that patients are usually anxious to keep in touch with the hospital which presumes to take an individual, rather than a case interest in them, leads us to speak of the development of what we call the follow-up system in our hospital.

We make an effort to keep in touch with every patient after he leaves us. In most cases we are content to hear from him once a year, but in many cases, especially those in which the character of the man's disease is of an insidious nature, we make an effort to hear from him at more frequent intervals. The mechanism of this follow-up system in the main hospital may be briefly described as follows:

In our central record room there is filed under the name of each patient a card known as the "End Result Card." This card contains all the important data in very condensed form. In other words, the name and address of the patient, of his friends and of his physician; the preliminary diagnosis, the final diagnosis: It contains the detail of the medical and surgical findings, and the condition of the patient at the time of his discharge. One year following his discharge, a letter is sent to the patient asking him to return to the hospital for inspection, provided he lives within a reasonable distance. Should he live too far away, he is asked to forward us, by return mail, a complete synopsis of his physical condition, from the time he left the hospital up to the present. The result of our inquiries, both as to the inspections and the data mailed to us, is entered upon this "End Result Card," so that each card represents the important points of the patient's history, of his stay in the hospital, and of his subsequent medical history. In other words, it is not necessary to consult old records and recent correspondence to find out about any case; it is kept to date on his "End Result Card." In addition to the yearly letter, we have also what is known as "Case Groups." For example, the surgeon whose special assignment is gastric surgery will from time to time send return postcards to each of his gastric group. The man interested in hysterectomies will request that cards be sent to his group. The same applies to the goitre group, to the fracture group, to the breast cancer group, etc.

The data contained on these postcards is entered daily upon the End Result Cards as well as in the patient's records. An additional refinement of this follow-up system is, that should the physician in charge be especially interested, either from a scientific or from the purely humanitarian fear, that the patient might not take care of himself, he merely puts his name on the list, and the man is notified monthly to return for inspection.

In our out-patient department we carry this follow-up system a little farther than we do in the main hospital; though we speedily learned that we should not attempt to follow up every case admitted, for we have a large out-patient department, averaging between six and seven hundred visits a day. We have lately confined our efforts to selected cases; for example, in the children's clinic, let us suppose that a badly neglected case, which requires rigid supervision of the feeding and of the home hygiene, is admitted. A card is made out for the clinic card catalogue, containing the name and address, the last most painstakingly accurate. Our especial form of card has a condensed calendar printed thereon. After the case has been examined by the physician, he notes in a space provided on the history card or record, the date upon which he wishes the patient to return—let us say, for example, one week from date. At the end of the morning clinic, all the histories are collected and the date on which the patient is to return, is copied on the individual's card calendar, which we have just mentioned. These cards are then filed under the date on which the patients are to return. Should a patient not return on the proper date, he is given two days' grace and then a postcard is sent asking that the mother bring the child to the hospital as requested. Should she fail to do this, a return postcard is sent asking that we be informed as to the conditions. Should no notice be taken of this return postcard, the social worker makes a visit if the doctor thinks the case is urgent; or should a personal visit not be necessary, a letter is written asking the favor of a reply.

It is a debatable question as to just how far the responsibility of the hospital extends, in looking after people. It may be that our tendency is to assume too much of the burden; but our results in following up these selected cases of either urgency or neglect, lead us to think that we are on the right track. This whole question of the future scope of the work undertaken by our hospital, is a big one, and it seems to us that it can only be answered by the facts brought out in the line of trial and error.

Perhaps one of the most interesting phases of our progress lately, is the investigation of the relation of occupation to disease. When a patient is admitted either to our out-patient department, or to the main hospital, we find out with considerable care, as to accuracy and detail, his occupation. For him to tell us that he is a shoemaker is not sufficient. We want to know what part of the shoe he makes and what his particular share in the making is called. That is to say, whether he be a cutter, a buffer, a nailer, a stitcher, a laster, a treer, a vamper or whatnot. These various subdivisions of the occupations are classified as accurately as possible, though as the work has never been done before, there is no guide to follow in the cataloguing. What discoveries our physicians may make as regards the relationship of occupation to disease, we cannot say, but if what has been done along the lines of lead poisoning is any indication, we may look for extremely beneficial results of our work. In our hospital work all workers in trades using lead, are referred to the attention of a social worker who is specializing in occupational diseases. She fills out a form on which is stated not only the history of a man's disease in brief, but also the history of his occupation. The actual social work which follows is as interesting as it is important. Should he be found suffering from plumbism, his employer is interviewed, and the actual working conditions looked into. If necessary a campaign of education as to the prevention, and the spread of lead poisoning is undertaken. The education of the employer as well as the workmen embraces not only hygienic improvement, discussions as to washing facilities, the value of respirators, etc., but also takes the form of the distribution and posting, of printed notices containing rules for the avoidance of the poison, and includes also personal interviews with the workmen. Our social service reports that the character of their reception at the various plants has been most cordial and welcome. Requests for literature from distant points have shown how the news of the good work has spread, and we are becoming more and more convinced that it is not a case of the employers being callous as to the question of lead poisoning among their workmen, nor of the workmen being callous as to the question of lead poisoning among themselves, but that it is just a case of either not knowing, or not realizing in time, the insidious danger of lead poisoning, and that both employer and workmen are as a rule quite willing, and in many cases quite anxious, to co-operate towards the prevention of this disease, if anybody will but take the time and trouble to instruct them how it may be done.

That routine we have just outlined as regards plumbism is being gradually extended so as to include the other dangerous trades. The ideal we are attempting to reach is the prevention of a trade either becoming dangerous, or remaining so, to the patient whose health is in our care. We feel that we should aid with all our strength the prevention of disease, and if conditions force us to do so, attempt to persuade the employers to change the patient's occupation to one in which he is less susceptible to involvement.

The transferring of patients to other institutions has always offered a broad field for social work, but latterly we have been paying more attention to the details of this form of welfare. We are endeavoring to place the patient where he will be most happy, or perhaps where he will be most convenient for his family to visit him. Then, too, our social service is learning to put far more time than ever before, in investigating the resources of the patient's family, and selecting the institution to which he is sent with a view to those resources. We feel that it is the hospital's duty not merely to place a man who has become a chronic invalid in a chronic hospital, but to place him in such a hospital in which the entire family will not be impoverished by spending their financial energies to support the patient in a pay institution, when he might be made quite comfortable in one to which there was no expense attached. In other words, our hospital conscience is becoming aware of the hospital's duty to the family as well as to the patient.

It has become quite patent in recent years, especially to those most interested in the admission of patients to charitable institutions, that we must extend our lines so as to include among our beneficiaries, not only the very poor who already receive free treatment from the most skilled of our physicians, but we must also provide for the man whose income bars him from the charitable institution but does not admit him to a private institution worthy of the name of an up to date hospital. It is the man of small income who cannot afford to make a circuit of consultants, for expert reports as to his eye condition, the question of a Wasserman test, Bismuth x-ray interpretation, etc. It seems to us that there is a duty that our hospitals, with their complete plants and staffs, owe to men of small income. Would it not be a magnificent increase in the efficiency of our hospitals, were they to devote a certain portion of the day either afternoon or evening to a clinic manned by a well paid staff of experts in the various branches of medicine, where the man of limited income could be admitted for a reasonable fee and obtain the routine examinations which would be otherwise denied to him because of their expense? Why should not the general practitioner have an opportunity to avail himself of this consulting clinic? We feel that he should.

The final topic we wish to bring to mind is the one which is creating so much discussion in the hospital world—namely, the feasibility of the full time staff. It is a question that must be well considered by the hospital administrator who desires to increase the effectiveness of his organization. We must realize that nobody does his best work in an undertaking which is but his second interest, and that should a physician be enabled through a sufficient salary to devote his entire time to hospital work, we would be enabled to command a quality of endeavor otherwise impossible. For generations noble men have given lavishly of their time and skill to the needs of our hospitals; but the expenditure of energy required by modern times to gain a livelihood, and the amount of study and research required to keep abreast of medical progress, tend to make the practising physician's traditional devotion to charitable hospitals more and more difficult to secure.

It is a question we must meet and meet squarely. The best interest of our hospital patients demands it.

There are several methods of meeting the issue. It has been suggested that a "pay clinic" be instituted in conjunction with the free hospital, or that certain selected members of the staff be placed on salary,—or that special consultation clinics where a moderate fee is charged, be established. These various suggestions all have value, and the final solution of the problem may embody them all, within certain limits. It seems to us, however, that for the present at least, the ideal arrangement is for large hospitals to reciprocate with the teaching staffs of our medical schools. Teaching affords the one unrelenting stimulus to the physician, for keeping abreast of medical progress, and makes for the most careful work. No man can unconsciously retrograde long in the presence of students, nor can patients fail to gain by the collective scrutiny to which their ailments would be subjected. This plan of having our hospital staff made up largely of the teaching staff of an adjacent medical school would mean that each man would be paid a salary which, though moderate in itself, would so supplement his teaching stipend as to pay adequately for his time.

We realize that we have but touched upon many important subjects. Each one of them is worthy of a paper in itself. If, however, we can help hospital administrators think more deeply upon the broad questions of hospital development and consider more carefully how the hospital should serve the community, we have attained our object.

DISCUSSION.

Acting-President: The paper is open for discussion. If there is none, I will ask the Secretary to read the report of the Committee on Membership.

REPORT OF THE MEMBERSHIP COMMITTEE.

To the American Hospital Association:

Your Committee on Membership begs to report that 138 applications for membership have been received, all of which are eligible for membership in the Association; 70 of these are Superintendents of hospitals, 19 Trustees, 16 Assistant Superintendents, 21 Superintendents of Nurses, 4 Physicians, 3 Surgeons, 1 Pathologist, and 4 members of charitable organizations.

According to states the applicants are divided as follows: New York 21, Minnesota 18, Pennsylvania 14, Illinois 13, Massachusetts 13, Iowa 8, Ohio 8, California 6, Michigan 6, South Carolina 3, District of Columbia 2, Georgia 2, Missouri 2, North Dakota 2, Rhode Island 2, South Dakota 2, Vermont 2, Connecticut 1, Florida 1, Mississippi 1, Montana 1, Indiana 1, Tennessee 1, Texas 1, Virginia 1, Wisconsin 1, British Columbia 3, Manitoba 1, Ontario 1.

According to the Secretary's list there have been 000 names deleted from the membership list as a result of members dying, relinquishing hospital work or being dropped for non-payment of dues.

Your Committee recommends the reception of the new applicants as members of the Association.

Respectfully submitted,
H. A. Boyce,
For the Committee.

DISCUSSION.

Acting-President: What do you wish to do with this report?

Dr. Seem: I move the report be adopted.

Seconded. Carried.

Acting-President: The meeting is adjourned until two o'clock.

THURSDAY, JUNE 24—AFTERNOON SESSION.

Called to order at 2:30 p. m. by Acting-President Summersgill.

THE BUILDING OF THE HOSPITAL—CONSTRUCTION.

By Oliver H. Bartine,

Superintendent of the New York Society for the Relief of the Ruptured and Crippled.

Within the past decade vast strides have been made in the practice of medicine and surgery, but it is the feeling of the writer that even greater progress has been made in the field of hospital construction and equipment, so that today the facilities providing for the care and treatment of the sick and afflicted are such as were not considered possible a few years ago.

In complying with the request of our beloved late President of this Association, Dr. William O. Mann, to prepare a paper on hospital construction, it has seemed best to me to give special consideration to those phases of the work which are more frequently overlooked by the building committee and to refrain from an attempt to cover the general construction details which have been ably presented by others at our previous conventions. It is obvious that to cover fully the field of hospital building construction would involve the writing of several volumes, so that the writer trusts that you will bear with him while he deals briefly with matters fundamentally important.

The architect, the consulting engineer and the builder are specialists in the different phases of construction. If they are students of the methods and developments in the hospital field, so much the better. Indeed, it is most desirable that they should be students, but more important that they should have had extensive experience in this work, but it is absolutely necessary that they should place much reliance upon the instruction and advice of those occupying and operating the new hospital and upon the building committee. Without the co-operation of those versed in the methods and purposes of the hospital and those experienced in the direction and management thereof, it can but be expected that the new building will be an architectural and engineering monument rather than a serviceable hospital. Therefore, it is most essential that the hospital authorities give freely of their time to the study and consideration of the various problems involved, and have frequent conferences with the architects, engineers and builders. And this is true regardless of the extent of the experience which the architect, engineer and builder may have had in general hospital construction, for every hospital has its individual needs, peculiarities and problems.

The work of many hospitals has suffered seriously through the lack of proper consideration by the members of the staff and building committee, who have placed too much reliance and responsibility upon the architect and the engineers, and upon individuals who have exercised too great an influence over the committee. This is not intended to imply that the staff and building committee should understand or dictate the materials or methods of construction, in so far as they do not affect the work and cost of the hospital building, but the remark relates more especially to the general arrangement and the equipment required to meet peculiar needs of the particular hospital. Some of the defects and the remedies proposed therefor are referred to in a paper by the writer on "The Building of the Hospital; Its Organization and Methods," read before the Hospital Alliance at the Academy of Medicine in New York on December fist, last, and I will therefore not dwell on this phase of the work at this time.

THE FIELD OF THE HOSPITAL.

Hospitals, like churches, should give a greater degree of consideration to their relations to the needs of the community. These, rather than personal reasons or desires, should serve as a guide in determining whether a particular hospital should be built in a particular locality. The creation of a hospital for special or personal reasons, regardless of needs, should be avoided. A plan should be devised whereby representatives of existing institutions and other interested bodies could pass experienced judgment upon a proposal for a new hospital before the establishment of such institutions by private bodies. It may be that this should not apply to strictly private hospitals where the public will not eventually be called upon for its support. The state boards of charities, whose function it is in many states to pass judgment upon such applications, should, and in many cases are, giving this matter their very serious consideration. Some local governing body should be in control of this matter in each state or section of the country.

SITE.

As in the case of the establishment of the hospital, the needs of the locality, and not personal inclination or preference, should guide in determining the location of a new hospital. The population, its character, and its needs should be carefully studied in connection with any site considered. The accessibility of the proposed site should also be carefully investigated; and its freedom from nuisance is most important.

The particular section of the country or city in which the hospital is built may have a direct bearing upon the nature of the service to be rendered by the hospital, particularly if the community is largely populated by the poor. Accessibility is also most desirable from the standpoint of the trustees, attending and visiting physicians, the surgical staff, and visitors to the hospital.

The elevation of the site, existing surroundings and the probable future of the neighborhood should also be the subjects of careful study. The site may also have a direct bearing upon the type of building proposed. Detailed consideration must be given to the problems of drainage, including the natural drainage of the subsoil, so that excessive expenditure for waterproofing of foundation and basement walls, or the continuous use of the drainage pump will not be involved. Similarly the possibility of sewer, water, electric, gas and telephone connections must be considered. A number of cases might be cited where these important matters have been overlooked, particularly the matter of drainage and water supply, with a resulting large expenditure of money which should have gone into the construction of the building and its equipment. Mature judgment in the selection of the site will result in a large saving of money which may otherwise have to be spent for water supply and other service connections.

Another most important consideration in the selection of the site should be the character of the ground as related to the matter of basement and foundations. To a large extent this is an unknown factor in any case, but a large amount of data relative thereto can be had by an investigation of the surface appearance of the site, with a further investigation of the conditions found upon excavation for other buildings in the immediate vicinity. The best information in this direction may be secured by making test holes or borings at various points on the proposed site of the hospital. Without such investigations the hospital board may find itself in possession of a piece of property which will involve rock excavation, piling, or even caisson work, costing a large sum of money which could be better used in the construction of the building proper. In the case of a hospital building recently constructed $100,000 was spent for rock excavation in excess of the cost of the same amount of earth excavation, this sum representing 9 per cent. of the total cost of the building.

Where there are existing buildings on the lot lines, the foundation walls of which do not go down so deep as will those required for the proposed hospital, expensive shoring of adjoining buildings may be required, this being in some cases so extensive as to become a serious item of cost. This should be given its due consideration in the selection of the site and in estimating the cost of the proposed building. The New York City building code specifies that the excavation for a new building may be carried fifteen feet below the curb line without involving the owners of the new building in expense due to damages to adjoining property, beyond which depth the owner of the new building must assume the expense of shoring and damages to adjoining property. Other cities have similar building code regulations.

A most serious mistake is sometimes made by the selection of a site which limits or determines the size and character of the building or the number of buildings of the new hospital. A small plot may so affect the arrangement of the buildings, or the units thereof, as to affect seriously the usefulness of the hospital. An irregularly shaped plot may have exactly the same effect. The building, or the arrangement thereof, should not be dependent on the site, but the site should be selected to suit the arrangement, character, size and number of buildings required. Any site which involves a limitation of the number, size or character of the buildings, or an illogical relation of the buildings, or the units or departments thereof, should be avoided. In determining upon the site the most careful and liberal provisions should be made for the future growth of the institution.

In a city, or portions thereof, where land is held at almost prohibitive prices the most careful consideration must be given to the cost of the site, and this matter should be determined in such a way that the expenditure thereof shall not rob the building fund to an extent which makes impossible the construction of a suitable building.

In an effort to secure the best site at the most reasonable terms one hospital secured prices on fifty sites without it becoming known that the property was desired for the construction of a hospital building. In this way the trustees obtained the best possible information as to the relative values of property, which, taken into consideration with the needs of the different communities and the other considerations affecting the availability of the various sites, enabled them to purchase a site answering every purpose, on which there were twenty houses held by nearly twenty different individuals, at a cost below the market price for realty in that particular section of the community. In a similar way some such plan could be carried out in nearly every instance.

GENERAL ARRANGEMENTS.

The general arrangement of the new hospital most vitally affects its future success. This should not be limited in any way by extravagance in plan or exterior. Neither the architect nor the committee should regard the new hospital building as a monument to themselves, to be arranged elaborately or ornamented at the expense of the convenience or utility of the building or its service to patients.

The exterior of the building may be constructed of common brick, of face brick, or of various stones, with a very material effect on the cost of the structure and without any effect on the efficiency of the hospital in carrying on its work. Therefore, it is felt that the plan of the hospital should be the first consideration and the ornamentation of the exterior a lesser consideration.

With reasonable skill and study a very satisfactory exterior may be obtained with the use of common brick and a small amount of terra-cotta or stone ornamentation. If sufficient funds are available to permit of the use of pressed brick and a greater amount of stone ornamentation without affecting the plan and scope of the hospital, this is desirable, but an ornate stone building or stone trimmed building should be built only where ample funds are available. Too great emphasis cannot be placed on the fact that the convenience of the patients and the service rendered to them should be the first consideration.

The location of the department occupied by resident patients may be more remote, and thus less to be considered than the departments serving the out-patients or constituting the dispensary.

It is unfortunate that we find in some of the newer hospitals the out-patients' and emergency departments so remote from the entrance as to be most inconvenient for the patients served by these departments. In some cases the first floor is so occupied by other departments that it becomes necessary for the visiting patients to walk upstairs or use the elevators. In other cases we find it necessary for the greatest number of patients, which are those using the out-patients' and emergency departments, to walk from a block to a block and a half around the building before reaching their entrance. Outside entrances directly to these departments are desirable wherever possible. In any case the patients should be given the first consideration in such matters.

The general practice of locating the operating suite at a remote section of the building, where the required isolation may be had, is to be commended, but nevertheless this should be so located as to be accessible to elevators or passageways connecting with all departments of the hospital which are served thereby.

The ambulance station and power plant should, whereever possible, be located as remotely as may be from the portions of the hospital buildings occupied by patients or employees. In many cases these departments may be advantageously accommodated in one separate building, together with the laundry.

Too frequently in the planning and construction of a new institution, especially where the institution consists of a number of buildings, the power plant and power house are given the last consideration. This should be one of the first things provided for, so that the power house may be erected and the plant installed in ample time to supply all the necessary heat, light and power incidental to the erection of the other buildings. Such a method of procedure will often materially reduce the cost of the construction of the building.

While it is manifestly desirable that the power plant, with its boilers, engines and refrigerating plant, should be remote from the main building, it is possible, in the case of small hospitals, or in the case of larger hospitals on sites of limited area, to place the power plant directly in the basement of the building and still provide for such quiet operation and isolation of the noise as to cause no annoyance. This may be accomplished by insulating the foundations of all moving machinery so that the noise and vibration incidental to the operation of the machinery cannot be communicated to the building, and by the use of sound and heat insulating ceilings which prevent the noise and heat incidental to the operation of the plant from being communicated to the rooms above.

The source of coal supply and ash removal should also be carefully considered and be located as remotely as possible from occupied apartments.

A careful study must be made of each and every department in order that each and every detail essential thereto shall be provided in a convenient manner and so that all departments may be properly correlated. In this study each department head and especially the chief physician and chief surgeon, should consult with the superintendent of the hospital (who should be a member of the advisory committee to the building committee) in order that no need may be overlooked and that the location of all departments may be properly related. Upon the superintendent principally, supplemented by the efforts of the building committee, will fall the duty of seeing that departments are properly correlated and that over-elaboration and extravagance are avoided. Contrary to a frequently expressed opinion, upon the superintendent must the greatest dependence be placed to exercise proper judgment in this respect. A well versed hospital specialist also would be of great assistance in guiding the building committee, the architect and the engineer through the shoals of insufficient or excess equipment.

In a like manner must the most careful consideration be given to the making of proper provision for future extensions of the hospital building. This must be provided for in the most flexible manner possible, as it is very difficult to foretell in what directions any hospital may grow most rapidly. Particularly in the design of the heating and ventilating and power plant are the services of a consulting engineer of extensive experience in designing hospital equipment desirable. Such experience is the best guide in so designing the plant as to provide for extensions and additions in every possible direction at the least expense.

FOUNDATIONS.

The importance of the hospital foundation cannot be over-estimated. The greatest amount of skill and experience is essential to the determination of the character of the foundations. These bear a very direct relation to the nature of the ground upon which the foundations rest. As has already been stated, ground requiring piling or construction of foundations by means of caissons should be avoided in every instance because of the expense involved in such work. Where an excessive amount of rock excavation is involved, or quicksand or other unstable material is encountered, a very large amount may be spent upon the foundation construction to the injury of the rest of the building.

The construction of the foundations should be under the direct supervision of a "clerk of the works," or resident superintendent, who should inspect each foot of the ground upon which the foundations are to rest, and the placing of all materials used in the foundations. More cracks, and settling of buildings, are due to defective foundations than to any other cause. The superintendent of construction should be a man of experience and ability to maintain strict discipline, for he is charged with the gravest responsibilities in connection with the foundation problem. The various contractors will often endeavor to influence him in accepting materials that are not in strict compliance with the specifications. He should be very skeptical of any change in material that is advised, for in most cases it is likely to be of inferior quality and of advantage to the contractor only. He should be very observant and attentive to his duties, for a small amount of defective work is enough to weaken the whole structure or building. This will also apply to the foundations for all machinery in the building.

The clerk of the works should remain upon the work until the building is completed in the case of any building costing $50,000 or more. The careful supervision of the building construction will save a great deal in the latter cost of maintaining the building and will result in the satisfaction of every one in a properly constructed building. If the man so employed be thoroughly acquainted with the installation of the mechanical equipment, so much the better, but such a combination in one man is rarely obtainable.

WALLS.

Reference has previously been made to extravagance in the construction of the building. The exterior appearance of a building does not add to its utility, and therefore great care should be exercised in regard to the style of architecture employed and the class of materials used. The usefulness of the building is chiefly dependent upon the plan and equipment of the interior. Economy and efficiency should, therefore, be the watchword in the construction of the building.

Whether brick or stone, or a combination of the two, shall be used on the exterior of the building must be determined upon the basis to which reference has previously been made.

Whether the walls shall be of self-supporting construction or of steel construction will depend largely upon the size and height of the hospital. Ordinarily any hospital over two stories in height may best be constructed with steel structure. Reinforced concrete for wall construction may only be used to advantage in large buildings.

All walls below grade should be carefully waterproofed, either by the use of hydrolithic cement or by the more generally used process of waterproofing felts and pitch. Above grade the exterior walls should be dampproofed to prevent dampness within the building.

Interior walls should in every case be fireproof and soundproof. By the use of terra-cotta blocks or pyroblocks, or similar plaster blocks, both purposes may be accomplished, inasmuch as they are made of fireproof materials and their construction is such that they provide one or more air spaces in the thickness of the wall.

Only the best of materials should be used for plastering in order to procure a hard, smooth surface and a wall surface which will be free from cracks and disintegration.

FLOORS.

The subject of flooring in a hospital is a much debated one. The fact of the matter is that careful consideration should be separately given to the character of flooring to be used in each department of the hospital, and suitable flooring, therefore, should be determined upon.

Certain fundamental considerations underlie the general question of flooring, and the most important detail thereof is the foundation for the flooring. Care should be exercised to see that a thoroughly substantial foundation is provided. This is especially important where composition floors are used, in connection with which it is especially important that pipes should not be concealed in the flooring where such floors are used, for the space left for such pipes constitutes a break in the foundation or flooring material which is sure to result in serious cracks. To a considerable extent this is also true where tile or concrete floors are used. Where wood floors are used pipes may be run in the floor construction if there is placed on the top of the concrete floor slab a floor fill of cinder concrete not less than 4 inches, and preferably 5 inches, in dept. It is extremely difficult to place steam pipes properly concealed in the floor construction with less than a 5-inch floor fill, for in addition to the pipes there must be provided space for insulation and for the pitch of the pipes. In many cases it is deemed necessary to place such pipes concealed in the floor construction, but this is not desirable if it can be avoided, and where it becomes necessary it is to be recommended that trenches be provided for the pipes with removable trench covers or floor pockets.

Another most important consideration in connection with floor construction is the soundproof quality thereof. In most modern hospital construction the floor slabs are of reinforced concrete. If a wood or tile floor is used, provision for soundproofing must be made by the placing of a cinder concrete fill on the concrete floor slab under the wood flooring. If composition floors are used little trouble will be experienced from the noise.

Probably the most satisfactory floor for the operating room is a hexagonal non-absorbent gray tile, which, when carefully laid on a proper foundation, with closed cemented joints, will give thoroughly satisfactory service. The gray tile is less tiring to the eyes than is the white tile and less difficult to keep clean. The tile should be thoroughly vitrified and should have an impervious surface.

For the wards also this gray tile makes a very serviceable floor and gives a very pleasant appearance, while it has the merit of being most durable.

Linoleum also has many advantages in wards and private rooms and also in private room corridors, but it is subject to the objection that it is easily marred and cannot withstand rough usage as well as the tile. Also it is absorbent, especially when the surface is worn off. If linoleum is used extreme care must be exercised in the selection of material and in the method of laying it. In connection with linoleum a light tile border is sometimes used with very satisfactory results. To avoid crevices between the tile and linoleum a metal strip may be used to fit into the grooves between the two materials, this being made with narrow flanges spreading over the edges of the linoleum and tile.

Despite objections urged against wood flooring it still finds most favor in private rooms. It gives a much more homelike appearance with resulting satisfaction to the patients. If the wood flooring used is thoroughly seasoned and dried, and if the committee and architect cause proper supervision to be exercised in its selection and laying, there is no reason why the objection commonly raised to the wood flooring, that it shrinks and results in annoying cracks, should exist. (Objections are justly offered to the appearance of linoleum, tile, or terrazzo in private rooms.)

In pantries, corridors, dressing rooms, toilets and other service rooms and spaces, tile and terrazzo floors are found to be the most satisfactory and durable. In some cases, however, the composition flooring has been used in these spaces with satisfaction, but the greatest of care must be used in providing proper foundations therefor and in selecting and laying the material.

For the out-patients' department preference should be given to a light colored flooring. Tiling is found to be more expensive than terrazzo and preference is, therefore, in many cases given to the latter. The Heatherbloom tile makes a very attractice appearance in an out-patients' department waiting room.

In the laundry and kitchen the tile or terra-cotta floors would be most satisfactory except for the objection of the employees that these hard floors are severe on their feet. For this reason the composition floors are found very satisfactory in kitchens, and, except in the wash room, in the laundry. Asphalt flooring has also been found satisfactory in kitchens and laundries, but care should be used not to lay the asphalt flooring near the ranges in the kitchen. A small area of vitrified brick flooring or cement should be placed about the range. In the wash room of the laundry a cement or asphalt floor will be found most satisfactory, the latter being the easier on the feet of the employees.

In the basement the cement flooring is no doubt the best. The same may also be said of the floors of the sleeping rooms and dining rooms for staff and employees with adjacent corridors. This is especially true if the floors are painted with a hard surface varnish paint. Or they may be covered with linoleum.

From the standpoint of daily cleaning and maintenance the terrazzo flooring is unquestionably the most economical and satisfactory flooring of the present day.

The approximate relative cost of various flooring materials, as stated by Mr. H. M. Hooker, are as follows, the material of the highest cost being first stated:

Marble.
Cork tile.
Rubber tile.
Tile, clay, ceramic, encaustic.
Mosaic tile.
Slate.
Terrazzo.
Composition flooring.
Wood, hard maple.
Asphalt.
Linoleum.
Portland cement, mortar finish.

TRIM.

Wood trim is still largely used in hospital buildings. All wood, wherever used in the building, should be properly and thoroughly dried and seasoned, and the most careful inspection should be given to it. Flat upper surfaces, mouldings and projections should be most carefully avoided. The design of the trim throughout should be such as to eliminate dust-lodging places. It is most unfortunate to find in many of our modern hospitals, at least in some of the departments, numerous dust-catching mouldings, cabinet tops and shelves. The cleanliness of the building depends largely upon the design of the interior finish, and therefore the greatest care should be exercised from the beginning as to the details of the doors, windows, closets, radiators, pipes, etc. When one enters a hospital building the first impression has much to do with the general impression of the hospital, particularly with the critical physician, and also with the hospital authorities and the casual visitor.

To a very large extent the use of the wood trim is being supplanted by the use of metal doors, window frames, window sash and general trim. While this represents a material increase in the expense attached, this matter should be given the most serious consideration by the building committee. It is particularly to be recommended that the corners in the main thoroughfares be reinforced with metal.

Many opportunities are overlooked for the provision of cabinets or closets in the walls of the rooms where they are most desirable, particularly in the matter of receptacles for bed pans, urinals, etc. Closets for these utensils should be thoroughly ventilated.

Hangings should be omitted as far as possible, but may be required to a slight extent in the private rooms, sun rooms, general recreation rooms and in the apartments of the superintendent, staff and employees, to give a homelike appearance.

AREAS.

In connection with many buildings the basement may be made serviceable by the use of the areaways. To provide properly for the ventilation and light of the rooms which they serve they should be of ample area, and the walls thereof should be lined with a white or light glazed brick, or with a light cement finish. They should, in every case, be thoroughly drained, and they should be readily accessible from the outside or by means of ample windows from the inside. Where gratings must be placed over these areas they should be substantial and yet open in design, and they should be removable.

FIRE EXITS.

Of the necessity for proper fire exits little need be said, for these must meet the requirements of all city building codes, and this is thoroughly understood by the architect and builder. Outside fire escapes are in many cases desirable, but interior enclosed fire stairways are largely used.

COLOR SCHEME.

Decision upon the color scheme throughout the building should not be hastily made, for the color scheme has much to do with the agreeable appearance of the hospital, and also has a direct bearing on the labor involved in the care of the interior. Colors should not be selected from the sample color sheets containing a number of colors, but by means of an actual application of the proposed color upon the walls of the rooms. By this means the members of the building committee may obtain a proper idea of the effect of the color proposed, and be enabled to make intelligent selections. The effect of surroundings and light upon various colors is such as to vary the effect of certain colors very materially.

In many hospitals one feels the lack of warmth or comfort due to an unfortunate choice of colors. Possibly the best way to obtain proper information regarding the selection of colors is by means of visits to existing hospitals where satisfactory color schemes are in use. The wall color must necessarily vary with the different departments or units of the hospital, and it should be considered with a view to obtaining the best colors for each particular unit. Care also should be exercised to procure those materials for wall finish which will give the most sanitary and lasting service, and which can be readily cleaned.

HEATING AND VENTILATING.

The degree of efficiency with which the building serves its purpose and is made comfortable and convenient depends most largely upon the character and completeness of its mechanical equipment. Quite as important also is the fact that the heaviest of the operating expenses of the hospital are those connected with the heating and power plant, and the extraordinary repairs and replacements necessary there.

Regardless of the different views as to the status of artificial ventilation as applied to the hospital, there can be no disputing the fact that the heating plant of the hospital is a most important department. Provision must be made for the heating of the entire building and for a source of steam for laundry, kitchen and sterilizing work. Further, there should be thorough means of ventilating all toilets, kitchens (including diet kitchens), laundry and many other service rooms. Very few there are who do not believe in the importance of a complete artificial ventilating plant for the operating room. It is believed that the consensus of the best opinion also requires that there should be provided exhaust ventilation for all the large wards, and in case of hospitals built in congested districts in the cities a supply of fresh air by means of an artificial ventilating system is also desirable.

A great deal is said of the success of natural ventilation, but it may be questioned whether the exponents of such a method of ventilation give proper consideration to the nuisance caused by open windows because of dust and noise, and to the effect of the dry air resulting from natural ventilation, as well as to the difficulty of controlling this method of ventilation.

These are subjects upon which there should be a very definite understanding, and upon which dependence should be placed upon a consulting engineer having extended experience in the design of such equipments for modern hospital buildings. By the employment of such a consulting engineer the building may be sure to have incorporated therein the most modern and improved methods of ventilation with freedom from an over supply of apparatus.

A vast amount of experimentation is at present in progress relating to the problems of ventilation, and it is to be hoped that definite standards will soon be agreed upon which will meet with the approval of the medical and engineering professions, as well as the approval of those who are responsible for the payment of the operating expenses. Possibly the most interesting and encouraging investigation of the problems of ventilation is that now being conducted by the New York State Commission on Ventilation, of which Professor C. E. A. Winslow is chairman; the other members of the Commission being Mr. D. D. Kimball, President of the American Society of Heating and Ventilating Engineers; Prof. F. S. Lee, of the College of Physicians and Surgeons; Professor Edward Lee Thorndike, of the Teachers' College, Columbia University; Dr. James Alexander Miller, of Bellevue and Allied Hospitals, and Prof. Earle B. Phelps, of the Hygiene Laboratory, Department of Agriculture, Washington. This Commission has available for its investigation a fund of $75,000, and has an experimental laboratory at the College of the City of New York and an experimental school plant at Public School No. 51, the Bronx, New York City.

Serious objections may be offered to any detail of the heating and ventilating equipment which is so arranged as to prevent thorough cleaning of all parts. To this end the hospital type of radiators should be used, these being constructed with an enlarged space between the radiator sections ,and the radiators should be suspended from the walls with a space of not less than three inches, and preferably four inches, at the back of the radiators, and not less than five inches between the bottom of the radiators and the floor.

The ventilating grills should be so installed that they may be readily removed or be readily opened to permit of cleaning of the backs of the grills and the connecting ducts.

So far as possible the pipes of the heating and plumbing systems should not be concealed. If they are not easily accessible, a repair, which in itself may be very slight, may involve a serious expenditure for the cutting of walls, floors or ceilings.

Where vertical pipes must be concealed in the walls it is desirable that ample doors should be placed over the chases so as to permit of access to the pipes. In a similar way pipes concealed in the ceiling may be made accessible by the use of doors adjacent to the position of the pipes, and preferably all such doors and their frames should be of metal. Pipes concealed in floors should be made accessible by placing them in trenches with removable sections of the floor, floor or trench plates over the pipes.

The cost of the heating and ventilating installation is a considerable item in the total cost of the building. Too often this cost is reduced by the use of insufficient apparatus, and more often still by the use of cheap materials which involve a high maintenance cost. Also the design of the installation is often accompanied by an entire lack of understanding of the particular needs of the hospital, and without the selection of the best apparatus for the purpose. The installation should be made with a view to the least possible cost of maintenance.

To some extent every hospital needs a ventilating apparatus, and some hospitals need a thorough artificial ventilating system. But it must be understood that the operation of the ventilating system costs money. Operating expenses may be reduced by a failure to operate the ventilating system, but in such case not only is the comfort of the hospital affected, but its efficiency is lessened, and the original cost of installation is wasted.

The operating and maintenance cost of the heating and ventilating plant is possibly the largest single item of cost in the operation of the hospital. For this reason the maximum of skill should be exercised in the design and installation of the plant. The purpose and needs of the hospital are so varied that the design of the heating and ventilating plant therefor is most complicated, and only the maximum of experience and skill will bring about the most satisfaction and the least maintenance and operating cost.

Because of the fact that the ultimate results are largely dependent upon the work of the operating engineer of the hospital, and because many of these men have had a large amount of experience in operating and maintaining hospital plants, it will be found of inestimable value to all concerned if the operating engineer be brought into intimate contact with those making the plans for the hospital and its equipment. Multitudinous problems will arise concerning which no one will have the same intimate knowledge and experience as will the operating engineer. Many of these men are most capable and conscientious and their experience will be found most helpful. This is particularly true in the case of determining upon the exact nature of the apparatus and equipment to be installed. It is not to be expected, however, that these men will be capable of designing the equipment of a new hospital building, large or small, for they are naturally not versed in the theory of the work, and there are many problems of design and installation with which they have had no experience. The designing consulting engineer must combine theory, experience and practice, and these the operating engineer may supplement with his practical experience with certain apparatus and with the special problems involved.

PLUMBING.

The type of fixtures to be used in connection with the plumbing systems are as varied as are the different purposes of hospitals and the different departments thereof. As a rule too little consideration is given to the exact needs of a hospital, and standard plumbing fixtures are often used instead of special fixtures available for hospital purposes. The fittings applied to the plumbing fixtures should be simple in design but heavy and substantial, and they should be especially designed for the purpose served.

Duplication of plumbing lines so frequently occurring in hospitals should be avoided wherever possible, and the plumbing piping system should be simplified to the last degree.

Where plumbing pipes must be placed under the floor they should be laid in trenches with removable covers, as in the case of steam pipes. The suggestions made relative to doors giving access to chases in the wall, or furred spaces in the ceiling wherein pipes are concealed. apply to the plumbing piping system as well as to the heating system.

In the case of one large hospital the toilets and service rooms on the various floors were arranged directly over each other, so that the entire system of plumbing piping was exposed in these rooms and thus was accessible at all times. The pipes are covered with painted asbestos coverings in such a way as to make it quite as easy to keep them clean as to keep the walls clean; and certainly the tremendous advantage in having the pipes thus accessible in case of necessity of repairs quite overbalances any objections to the exposed pipes.

Cleanout plugs in the soil and drain pipes are customarily required by plumbing codes, but in absence of such requirements extreme care should be used to see that brass screw-cap cleanouts are provided throughout the system. This is especially important in connection with waste lines from the pantries, carrying grease, and also in lines connecting to the operating rooms, dressing rooms and other rooms where special conditions demand.

Care should be exercised in the roughing in of the plumbing system to see that all piping in the waste and drainage lines is reamed internally so that the lines shall be free from burrs and other obstructions. Such care will save much later annoyance and expense.

Very frequently fire hose is found suspended on hose racks exposed on the corridor walls in hospitals. A much better method is to provide a cabinet with a glass door containing the fire hose, the face of the cabinet being flush with the wall of the corridor.

ILLUMINATION.

The development of the art of illumination is progressing rapidly. The subject of hospital illumination is just beginning to receive the attention which it merits. The most careful attention to this phase of hospital construction is demanded on the part of the hospital authorities, the architect and the consulting engineer. Special problems relating to the efficiency and comfort of the illumination are involved, and in working out the best results in these directions the economical operation of the illuminating system may not be overlooked. It is not uncommon to find a new hospital building planned and built without any conference on the subject of illumination between the architect, engineer and hospital authorities, the idea being in this instance, as in some others, that the architect and engineer are engaged as experts and should know just what will best meet the conditions. Such a plan ignores the fact that the building may have, and usually does have, peculiar problems on which the hospital authorities and staff alone are best informed, and this plan further disregards entirely the vast amount of valuable experience and information which the superintendent, doctors and operating engineer may have accumulated in the conduct of this particular hospital or other hospital buildings.

With the advance of the art of illumination new electric lamps of increased efficiency will be available, new designs of fixtures will be made to meet existing conditions and new ideas, all of which will modify the opinions of those connected with this work.

A general rule should be laid down that the lighting fixtures should be simple in design but neat in appearance, as free as possible from ornamentation, heavy and durable, easily cleaned and not expensive to repair or replace. The reflector now in use on the indirect and semi-indirect fixture is a troublesome dirt collector which is not easily cleaned, and expensive to renew in case of breakage. The problem of obtaining a fixture free from these objections needs careful study, for the indirect and semi-indirect methods of illumination have many advantages which warrant their retention.

Possibly the operating room offers the greatest difficulty in the matter of illumination. That there should be no permanent ceiling fixture in the operating room seems certain. Despite extreme care it will be found to be a dirt collector and distributor, and it seriously concentrates heat over the operating table. I have been conducting some experiments in this matter of operating room lighting with most interesting results.

The most satisfactory result has been obtained by building in at the junction of wall and ceiling entirely around the room a trough containing a large number of electric lights of small wattage, the sizes of which depend upon the size of the room, with other lights placed in a box built into the ceiling directly over the operating table, and still other similar lights built into the wall at each side of the operating room at a height approximately that of the operating table, these latter being used only when required. Supplementing this arrangement there should be one or two plug outlets to which portable lights may be connected for special illumination when and where desired. These outlets will also be found useful for electric bone saws, cauteries and other modern electric appliances.

The lighting trough referred to is fitted with suitably shaped polished or mirrored reflectors with cover plates set flush with the surface of the wall and ceiling. The cover plate or frame is hinged and contains a glass screen, there being ventilated openings in the frame. The exposed surface is finished in white enamel or may be nickel plated. The setting of this fixture is so arranged as to throw the light principally on the operating table, but the reflected light from the ceiling and walls results in a most uniform degree of illumination. The extent of this illumination is such as to obviate entirely shadows at the operating table because the rays of light come from a multitude of directions. The switch control may be so arranged as to turn on all the lights or alternate lights in the trough, as desired.

There are many advocates of the use of dark colors on the walls of the operating room. The author feels that this is a mistake, inasmuch as dirt may not be easily detected and the darker colors interfere with proper reflection and diffusion of the light from the walls. While a relief from the glazed white walls may be desirable, it is believed that this may be accomplished without recourse to the very dark walls.

Recent tests made by illuminating engineers show that light is absorbed by walls of different colors as follows:

White	18%	Emerald green	82%
Chrome yellow	38%	Dark brown	87%
Orange	50%	Vermilion	88%
Plain deal	55%	Blue green	88%
Yellow	60%	Cobalt blue	88%
Pink	64%	Deep chocolate	96%

This refers, of course, to the reflecting effect of these colors, that is, the effect of the lighting on the room is not exactly in proportion to the above figures. It will, however, be noted that only the first two colors (white and chrome yellow) reflect more than half of the light received. The effect of dark walls in the operating room is therefore evident, and if these are to be used the volume of light must be materially increased to provide the same degree of illumination at the operating table. It is believed that the discomfort to the operator may be overcome without recourse to undesirable dark colors. The omission of the glazed surface on the wall, substituting a flat light finish, will go far towards accomplishing this desired result.

The general use of the three and four-way switch is to be recommended, by means of which the first push on the button will turn on one light, which may be of small wattage for night use, the second push turns on the remaining lights, the third push puts out all except the first light, and the fourth push turns off the small light.

The electric equipment of the modern hospital has become most complicated, but no detail of the hospital is more important than its electric equipment. The wiring system is almost universally the three-wire 110-220-volt system, the lights being operated at 110 volts and the motors being connected to the 220-volt service.

Special outlets should be provided in all wards, private rooms and treatment rooms for special devices for heating, and in the kitchens, especially in the diet kitchens, similar outlets should be provided for cooking and other work. Similar outlets for laboratory purposes should be provided in all laboratories. These special outlets may well be located about three feet from the floor.

It is most desirable that the lighting, power and special service outlets should be connected to separate wiring systems back to the main switchboard in the basement.

The telephone equipment is a puzzling problem. To maintain public service telephones in all departments is expensive. The best arrangement for a large hospital is doubtless the maintenance of the public service telephones in the general offices and the principal departmental offices, with an interior private telephone system where additional telephone service is important for the administration of the hospital.

In private room pavilions a telephone plug outlet may be desirable in the private rooms to which telephones may be connected when a patient's desire and condition make this permissible. For the service of the doctors who spend much of their time about the building, a device largely used in mercantile establishments may be desirable. This consists of a horizontal rectangular box containing signal lights back of a dark glass plate carrying numbers corresponding to numbers given to the doctors, which are visible only when a light back of the plate is flashed. Thus if the doctor assigned number 8 is is some part of the hospital and is wanted at the telephone the operator can flash a light at every one of these signal stations which illuminates the number 8 and the doctor can then go to the nearest telephone.

The nurses' call system is a most important part of the electrical equipment. Annunciators at the nurses' stations or in the service rooms, operated by pear push buttons at patients' beds are largely used. Frequently this system is supplemented by a light over the door which lights simultaneously with the drop at the annunciator when the pear push is operated by the patient. This system should be arranged so that the annunciator can be reset and the light put out only when the nurse visits the room of the patient. In some cases the separate units of the annunciator system are supplemented by a general annunciator system in the main office, so that the time intervening between the patient's call and the visit of the nurse can be detected by the proper person in charge. This system is believed to be better than the system of semaphores over the doors entering the private rooms, which are usually reset by the nurses upon entering the rooms; the fault of these is that these semaphores can be reset without the nurses entering the room.

In large hospitals a general clock system is also desirable, the clocks being located at convenient positions throughout the building.

A watchman's clock system is also desirable. This, when properly used, insures proper safeguarding of the building and lessens the insurance rate. The most desirable form of watchman's clock system is that which utilizes the portable clock carried by the watchman, with the keys located at stations throughout the building in such a way as to insure the watchman's visit to every portion thereof.

A fire alarm system is also desirable. The most approved system is the selective system, with an auxiliary connection to the city or community fire alarm system such as is largely used in hospitals and school buildings.

POWER PLANT.

The question of the advisability of the installation of an electric power plant depends only upon the size of the hospital. Wherever fire room service for twenty-four hours is necessary and boilers of 100 H. P. capacity or greater are required, there can be little doubt as to the advisability of installing an electric power plant. In practically all hospitals steam at sixty pounds pressure is required for sterilizing purposes and also for laundry purposes. Steam also is required for cooking purposes at 40 pounds pressure. The piping system for the sterilizing and laundry work may be combined, but the cooking apparatus should be provided with a separate system of piping, while the heating is connected with still another separate system of piping. Thus the steam must be generated originally at 60 pounds pressure and be reduced to 40 pounds pressure for cooking and to approximately 2½ pounds pressure for heating purposes. It is just as easy and quite as economical to generate steam at 80 to 100 pounds, or even 125 pounds pressure, for the operation of engines for driving electric generators.

The exhaust steam from the engines may be passed directly into the heating system through a grease extractor and be used a second time; thus the electricity produced becomes a by-product. Otherwise the steam leaving the boilers at a high pressure must be passed through a reducing valve to reach the low pressure required for heating. The engine merely serves as a reducing valve and the most efficient kind of reducing valve. Only about seven to ten per cent. of the thermal value of the steam is utilized by the engines and the balance may be utilized in the heating system, thus making double use of the steam. In practical experience it has been found that the exhaust steam from the engine provides for a better circulation in the heating system, largely compensating for the small loss in thermal value. Usually in hospital work the amount of steam required by the engine and passing through same to the heating system is insufficient for heating purposes, and the deficiency is automatically made up by means of steam passing through a reducing valve.

In the summer, when heat is not required, a considerable proportion of the exhaust steam may be utilized for heating water for laundry purposes, for heating driers and for other purposes.

In many such plants the electric current is being made at a cost of one cent per K. W. H., and one of our largest New York hospitals made their electric current for ⅝c per K. W. H. In another of our New York hospitals an installation costing $17,000, and including electric power plant and refrigerating plant, resulted in a saving of $7,100 annually.

FIXED EQUIPMENT.

In the determination of the nature and amount of fixed equipment required, the size and character of the hospital must be the determining factor, and this is a matter which must be considered from many standpoints. First, the needs of the hospital are to be regarded; second, the quality of workmanship, material and finish are most important, and third, the efficiency of the equipment should be carefully considered. A consideration of the size of the hospital with the number of its beds and the kind and amount of work to be accomplished in a given time will all be determining factors. From the standpoint of economy of maintenance and operation much depends upon the character of the installation of the apparatus, which must be the highest quality in every respect. The maintenance cost of cheap apparatus is so high, and the annoyance of frequent repairs, and interruptions of service, are so great that only the best apparatus may safely be used. Only such equipment should be selected as can be readily replaced in case of necessity. Much equipment is especially designed with a result that a great delay is experienced in purchasing repair parts when same become necessary. Standard equipment will in nearly every case answer the same purpose as specially constructed equipment.

The cooking, laundry and sterilizing requirements are generally understood. The elevator equipment also involves no specially difficult problem. In this connection, however, it is a common practice for the building committee and the architect to leave the matter very largely to the elevator manufacturer, whose specifications are too often used with a result that the installation is elaborate and expensive. This matter should be left largely in the hands of the consulting engineer, for bids based on independently prepared plans and specifications will result in a complete equipment at the lowest cost.

Many hospitals are over-supplied with equipment, particularly in the laundry, largely due to the use of manufacturers' plans and specifications for this equipment. Frequently hospitals have laundry equipment much in excess of actual requirements, with some pieces of apparatus which are almost never used.

It is especially recommended that arrangements should be made so that every piece of apparatus in the laundry, or for that matter in any part of the hospital, can be removed without serious expense. It is desirable that large doors or windows from the laundry directly to the outside should be provided of such size that any unit of the laundry equipment may be hauled in or out of the building. This is usually considered in connection with the power plant, but is more often overlooked in the construction of the laundry.

A careful consideration of the many little details necessary for the complete equipment of the hospital will go far towards giving complete satisfaction in the working of the hospital. These details are too numerous to enumerate. Mention may be made of a device recently introduced consisting of a white enameled metal rack, which is designed for attachment to the bed or to the wall for holding all of the toilet necessities in a sanitary, neat and compact manner. This rack provides for the holding of the towel, wash cloth, hair brush, comb, tooth brush, drinking cup, etc., so that all of these can be placed in a space 7½ inches long by 5 inches wide.

COST.

A great deal has been written concerning the cost of hospital buildings. Any statement of cost based upon the cost per bed may be misleading to the trustees, superintendent and others. For instance, a hospital caring for a special class of patients requiring extra rooms and special equipment cost $4,000 per bed. If the same building had been planned as a general hospital beds could have been placed in the special extra rooms mentioned, thus increasing the bed capacity of the building to such an extent that the cost of the building would not have exceeded $3,000 per bed. This hospital has special eployees for special purposes and rooms, but perhaps not as many as would be required to care for the extra number of patients which might have been accommodated in the special rooms, but even after making liberal allowances for these conditions it is found that this hospital would not have cost over $3,300 per bed if used as a general hospital instead of $4,000 per bed as it actually cost, based upon the number of patients accommodated.

After making a careful study of this matter of costs the author has come to the conclusion that a better basis of determining the cost of the hospital building is the cost per cubic foot. In determining the number of cubic feet of the hospital, measurements should be taken from the basement or sub-basement (lowest) floor level to the mean of the outside of the roof, and from outside to outside of walls. In other words, the cubic feet of air displaced by the exterior dimensions of the building should be considered, eliminating approaches, ballustrades and other projections not enclosing space.

It is true that it is quite possible to be wasteful in space, so that the cubic feet of space per patient may also well be given consideration.

In table No. 1 are presented segregated costs of the construction of twenty-two hospitals and hospital buildings. In the case of hospital No. 22 the cost per patient is shown to be $5,159, which is very high, while the cost per cubic foot is shown to be 30 cents, and this is very low.

It has been stated that no hospital building should cost in excess of 30 cents per cubic foot, but it will be observed by reference to this table that rarely is a general hospital built at such a low cost. The fact of the matter is that local conditions, the character of the hospital and its work, and the elaborateness of the structure must all be carefully considered in determining the price per cubic foot. Eliminating No. 17 (which is a boiler house), the cost per cubic foot of all of the hospitals listed averages .382 cents. The cost of the heating and ventilating equipment per cubic foot averages .033 cent (after eliminating No. 9, which included no boiler plant).

The cost of the electric system averages 1 cent per cubic foot; electric fixtures average .003 cent per cubic foot; plumbing averages .029 cent per cub foot (omitting No. 16, which is a laundry building); refrigerating plants average .012 cent per cubic foot; vacuum cleaner systems .002 cent per cubic foot; elevators .007 cent per cubic foot; laundry equipment (excluding Nos. 13 and 16, which are purely laundry buildings) .004 cent per cubic foot; kitchen equipment .004 cent per cubic foot; power plants average .005 cent per cubic foot. Thus the construction of the building (exclusive of its fixed equipment) averages .273 cent per cubic foot, as shown by this list.

Table No. 2 gives a segregated statement of the cost of hospital buildings exclusive of equipment, in the case of thirteen hospitals.

In the case of certain items, as masonry, the cost per cubic foot corresponds very closely in the case of practically all of the hospitals listed. It is the author's belief that every hospital building should have its cost analyzed and segregated in some such manner as that shown in tables one and two. By this means extravagance in any particular item of the work may be successfully avoided.

I wish to express my appreciation of the courtesy and co-operation of Mr. D. D. Kimball, Mr. A. M. Feldman, Messrs. York and Sawyer, Messrs. Marc Eidlitz & Son, Messrs. McKim, Mead & White, Mr. James U. Norris, Mr. Alexander Candlish, Doctor George O'Hanlon, Doctor Robert J. Wilson, Mr. Reuben O'Brien, Doctor Frederick Brush, and Doctor S. Wachsman in the preparation of the above mentioned cost data tables.

ORGANIZATION FOR INVESTIGATION.

From time to time we learn of associations and authorities endeavoring to create a national investigating body or a central bureau for the purpose of making a comprehensive study of the subject of bettering the conditions of hospital institutions as a whole. A higher

COST DATA TABLE Nº 1 HOSPITAL BUILDINGS

BUILDING		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22		AVERAGE COST PER CU.FT.
CUBITURE OF B'LD'G		2,096,000	1,919,267	1,687,000	3,338,000	4,230,105	1,345,815	736,355	1,406,400	508,375	1,327,415	905,000	249,700	210,300	1,718,010	1,877,931	927,415	334,150	1,967,762	3,768,282	777,500	367,200	3,704,287		
NO. OF PATIENTS		225	181	152	500	450	150	150	232	70	179	250	85	—	410	330	—	—	407	303	150	110	220		
CU.FT. PER PATIENT		9,320	10,603	11,098	6,676	9,400	8,958	5,042	6,062	7,262	7,416	3,625	2,937	—	4,190	5,537	—	—	4,834	12,440	5,182	3,340	16,837		
TOTAL COST OF BUILDING	TOTAL	897,166	610,000	525,000	851,000	1,736,739	516,733	251,081	561,954	214,164	679,182	399,220	87,367	74,845	686,734	789,795	500,876	334,000	738,404	1,366,780	257,761	146,521	1,134,974		
	PER CU.FT.	.428	.317	.311	.255	.41	.384	.332	.40	.44	.51	.44	.35	.35	.40	.42	.51	.73	.39	.36	.33	.40	.30		.382
	PER PATIENT	3,987.00	3370.70	3,453.34	1,702.00	3,815.00	3,445.00	1606.00	2720.00	3,061.00	3800.00	1600.00	1,027.85	—	1,675.00	2,256.60	—	—	1,863.40	4510.80	1,718.40	1,332.00	5159.00		
COST OF HEAT. & VENTIL.	TOTAL	86,461	55,500	41,660	104,705	141,137	48,595	26,452		10,855	82,887	46,000	5,698	4,600	70,000	52,180	57,600	To Power Plant.	63,125	137,000	20,611	3,000	115,989		
	PER CU.FT.	.04	.029	.025	.031	.033	.036	.035		.018	.06	.05	.022	.022	.04	.028	.06		.039	.037	.026	.008	.031		.033
	PER PATIENT	384.00	306.70	272.00	209.40	313.60	324.00	175.00		155.20	460.00	184.00	67.00	—	170.30	150.00	—	—	155.06	452.14	137.40	27.27	527.22		
COST OF ELECTRIC SYSTEM	TOTAL	26,399	15,920	12,962	31,729	27,632		9,594	3,000		26,686	7,600	1,700	2,600	8,700	46,501	6,800	1,100	14,366	20,875	9,000	3,200	19,964		
	PER CU.FT.	.012	.008	.007	.009	.006		.013	.002		.02	.008	.007	.011	.005	.024	.007	.002	.007	.006	.011	.009	.006		.009
	PER PATIENT	111.00	88.00	85.00	63.46	61.40		63.90	14.90		149.00	34.00	20.00	—	21.22	141.50	—	—	35.30	68.72	60.00	29.09	90.63		
	PER OUTLET	16.50		7.35		8.00		10.90			15.00														
COST OF ELECTRIC FIXTURES	TOTAL	7,971	3,250	5,000	9,772	10,000	3,575	2,180			6,561				3,640	9,750	1,744		4,000	6,823		2,540	5,958		
	PER CU.FT.	.003	.002	.003	.003	.002	.002	.003			.005				.002	.005	.002		.002	.002		.007	.002		.003
	PER PATIENT	35.40	18.00	32.89	19.54	22.22	24.83	14.40			36.00			—	9.00	28.00	—		9.82	22.51		23.09	27.00		
	PER FIXTURE	7.00		6.39		5.80		6.00			6.32														
COST OF PLUMBING SYSTEM	TOTAL	61,789	45,800	37,500	55,332	109,664	32,600	23,000			65,265	17,000	6,200	2,523	51,439	72,840	85,000	10,000	62,680	111,200	20,900	12,197	102,614		
	PER CU.FT.	.029	.023	.022	.015	.026	.024	.03			.05	.019	.025	.012	.03	.04	.09	.018	.032	.03	.02	.038	.019		.029
	PER PATIENT	274.00	253.04	246.05	110.60	243.70	217.33	153.00			362.50	68.00	73.00	—	125.45	200.11	—	—	154.00	363.70	139.35	110.90	467.00		
	PER FIXTURE	226.40		143.70		165.65	150.00	156.00			253.00														
COST OF REFRIG. PLANT AND BOXES	TOTAL	17,308	16,900	13,700	25,947	37,722		5,300		3,368	21,211		443			40,800	62,000		6,882	58,250	3,500		7,433		
	PER CU.FT.	.008	.008	.008	.008	.009		.007		.007	.01		.002			.021	.066		.005	.017	.004		.002		.012
	PER PATIENT	77.00	93.32	90.13	51.88	83.82		35.50		48.10	118.00		8.21	—		114.50	—		17.01	192.24	23.33		33.80		
COST OF VAC. CL. SYSTEM	TOTAL	—	1,900	—	—	2,603				—	—			—	5,573	5,935	2,400	—	3,625		4,500		-		
	PER CU.FT.	—	.001	—	—	.0006				—	—			—	.003	.003	.002	—	.002		.005				.0023
	PER PATIENT	—	10.49	—	—	5.70				—	—			—	13.60	17.10	—	—	9.00		30.00				
COST OF ELEVATORS	TOTAL	22,225	11,200	3,360	22,473	32,280	16,515	2,459			16,100	8,000	1,113		6,200	18,000	4,300	1,500	7,625	16,500	9,000	2,700	5,855		
	PER CU.FT.	.016	.006	.002	.007	.008	.012	.003			.013	.009	.003		.003	.01	.003	.003	.004	.005	.01	.008	.0016		.007
	PER PATIENT	99.00	61.80	22.10	44.95	71.73	110.00	16.30			90.00	32.00	13.00	—	15.12	54.28	—	—	18.73	54.45	60.00	24.54	26.61		
COST OF LAUNDRY EQUIPM'T	TOTAL	9,729	6,320	5,956	11,707	20,715	5,298	3,575	4,984	—	—			16,000			39,382	—					15,601		
	PER CU.FT.	.004	.003	.004	.003	.005	.004	.005	.004	—	—			.06			.059	—					.005		.017
	PER PATIENT	43.20	34.90	39.11	23.41	46.00	35.32	24.00	21.40	—	—			—			—	—					709.13		
COST OF KITCHEN EQUIPM'T	TOTAL	3,239	6,475	4,000	—	13,802	4,118		8,009		6,890			—			—	—				2,500	8,000		
	PER CU.FT.	.001	.003	.003	—	.003	.003		.006		.005			—			—	—				.007	.002		.0037
	PER PATIENT	14.30	36.00	26.32	—	30.70	27.45		38.00		38.35			—			—	—				22.72	36.66		
COST OF POWER PLANT	TOTAL	15,000	7,400	7,078	15,440	21,570		4,530	—	14,176				—		To Elect. Syst.	—	161,500					66,000		
	PER CU.FT.	.007	.004	.004	.005	.005		.006	—	.028				—			—	.502					.018		.047
	PER PATIENT	66.66	40.90	46.50	30.88	47.90		30.00	—	202.50				—			—	—					300.00		
	PER K.W.	75.00	30.00 ①	70.78	44.11 ②	95.86		75.00	—	141.00 ③				—			—								
PERCENTAGE CONTRACTS BEAR TO TOTAL COST OF BUILDING	BUILDING	72.2	73.4	75.2	67.1	74.26																			72.44
	HEAT. & VENT.	9.6	8.1	7.9	12.3	8.1	9.4	10.2		3.0	12.0	11.8	6.3	6.1	10.2	6.6	11.5		8.4	10.0	8.0	2.0	10.2		7.2
	ELECTRIC	2.3	2.6	2.5	3.7	1.8	.6	4.6	.6		4.0	2.0	2.0	3.5	1.5	6.02	1.8	.3	1.3	1.6	3.5	2.0	1.7		2.4
	E. FIXTURES	.9	.5	.3	1.1	.6		.8			1.0				.6	1.5	.3		.5	.5		1.3	.4		.80
	PLUMBING	6.9	7.5	7.1	6.5	6.4	6.3	9.2			9.6	4.6	7.0	3.4	7.5	5.3	16.0	3.0	8.5	9.3	8.0	8.0	9.0		7.6
	REFRIG.	1.9	2.8	2.6	3.5	2.1		2.1		1.5	8.1		.5	—		5.5	12.5		.3	4.9	1.5		.6		2.9
	VAC. CLEAN.	—	.3	—	—	.15				—	—			—	.8	.8	.4		.6		1.7				.80
	ELEVATORS	2.5	1.8	.84	2.6	2.6	3.2	1.0			2.4	2.0	1.3	—	.9	2.5	1.6	.5	1.0	1.2	3.8	2.0	.5		1.76
	LAUNDRY	1.1	1.0	1.1	1.4	1.4	1.2	1.4	.3	—	—			21.8			10.6						1.4		3.9
	KITCHEN	.4	1.0	.76	—	.79	.8		1.6		1.1			—								2.0	.7		1.01
	POWER PLANT	1.6	1.0	1.3	1.8	1.8		2.0	—	6.6 ③				—				41.0					6.0		2.8

① Provides capacity for several other buildings. ② No piping included. ③ Large amount of piping involved.

COST DATA TABLE Nº 2 HOSPITAL BUILDINGS

BUILDING		1	2	3	4	5	6	7	8	9	10	11	12	13		AVERAGE COST PER CU.FT.
CUBITURE OF B'LD'G		905,800	249,700	210,300	1,327,413	1,718,010	1,877,931	927,415	534,150	1,967,762	3,768,282	777,308	367,200	2,096,000		
COST OF CONSTRUCT'N		320,620	72,221	49,320	441,682	541,214	540,539	224,050	219,900	594,131	1,016,132	190,250	120,384	647,045		
COST OF MECH. EQUIPM'T		78,600	15,146	25,625	237,500	145,540	249,256	276,626	174,100	164,273	350,648	67,511	26,187	250,121		
TOTAL COST OF B'LD'G		399,220	87,367	74,945	679,182	686,754	789,795	500,676	394,000	758,404	1,366,780	257,761	146,521	897,166		
EXCAVATION	TOTAL	22,220	1,110	2,500	28,541	33,000	40,000	40,000	33,600	79,750	138,000	6,000	4,917	30,895		
	PER CU. FT.	.024	.004	.011	.025	.019	.021	.043	.063	.041	.036	.007	.013	.015		.026
MASONRY	TOTAL	111,700	25,216	23,420	175,303	260,950	196,760	91,050	105,900	249,147	417,095	71,650	53,654	222,878		
	PER CU. FT.	.12	.10	.11	.132	.152	.105	.098	.198	.127	.111	.092	.146	.12		.124
STRUCTUR'L STEEL & IRON	TOTAL	55,450	11,500	9,500	59,938	66,000	90,414	35,000	37,500	71,738	115,750	33,100	17,000	80,648		
	PER CU. FT.	.06	.05	.04	.045	.038	.048	.038	.070	.036	.031	.043	.046	.04		045
CARPENTRY	TOTAL	20,400	7,400	6,500	46,348	53,500	60,000	22,000	5,800	65,395	61,000	19,025	12,000	71,225		
	PER CU. FT.	.022	.03	.03	.035	.032	.032	.024	.018	.033	.016	.024	.033	.035		.028
ROOFING	TOTAL	18,000	5,800	3,000	9,700	9,319	48,365	8,100	9,500	13,523	41,687	In Steel & Iron	8,967	23,080		
	PER CU. FT.	.02	.02	.014	.007	.005	.026	.009	.018	.007	011	—	.024	.011		.010
GLASS & GLAZING	TOTAL	In Carpentry			In Carpentry	In Carpentry	In Carpentry		In Carpentry		36,000	1,000	400	6,202		
	PER CU. FT.	—			—	—	—		—		.0095	.001	.001	.003		.0036
SKYLIGHTS & SHEET METAL	TOTAL	In Roofing			In Roofing	In Roofing	In Roofing		In Roofing	In Roofing	In Roofing	8,525	In Roofing	In Roofing.		
	PER CU. FT.	—			—	—	—		—	—	—	.011	—	—		.011
PAINTING	TOTAL	5,000	1,095	950	In Carpentry	4,250	In Carpentry		In Carpentry	3,564	In Carpentry	In Carpentry	5,000	26,478		
	PER CU. FT.	.005	.005	.004	—	.002	—		—	.002	—	—	.014	.013		.006
LATHING & PLASTERING	TOTAL	10,000	2,660	1,750	16,500	22,800	20,000	6,000	400	20,225	37,500	15,000	10,060	41,237		
	PER CU. FT.	.01	.017	.008	.012	.013	.011	.007	.0008	.01	.01	.009	.027	.026		.0123
COMPOSITION FLOORING	TOTAL				13,103	20,000	14,000		5,000		29,000	3,750	In Masonry	8,106		
	PER CU. FT.				.01	.015	.008		.009		.008	.002	—	.004		.008
TILES, MOSAICS & MARBLE	TOTAL	46,000	17,000	1,200		18,200	31,000	1,500	800	41,260	65,600	11,000	2,886	63,029		
	PER CU. FT.	.05	.07	.006		.016	.017	.0016	.0015	.021	.0174	.014	.008	.031		.0211
HARDWARE	TOTAL	4,850	440	In Carpentry	In Carpentry	4,100	5,000	400	400	5,125	9,500	2,200	In Roofing	9,080		
	PER CU. FT.	.005	.002	—	—	.002	.003	.0004	.0008	.0026	.025	.0028	—	.004		.005
CAST IRON	TOTAL	27,000	In Steel & Iron	In Steel & Iron	30,000	49,095	35,000	20,000	21,500	44,210	35,000	19,000	5,500	44,189		
	PER CU. FT.	.03	—	—	.023	.023	.019	.022	.04	.022	.009	.024	.015	.022		.022
BRONZE & BRASS WORK	TOTAL															
	PER CU. FT.															
TOTAL COST PER CU. FT.		.44	.35	.35	.51	.40	.42	.51	.73	.39	.36	.33	.40	.428		.432

standard of efficiency would doubtless be obtained if such an organization existed, and it would better enable the authorities of the various hospitals and institutions to judge of their own defects and means of rectifying them. Some hospitals are aware of defects existing therein but take no steps to remedy them, while others are entirely oblivious as to the nature of troubles existing in their buildings.

In may, 1913, the Philadelphia County Medical Society appointed a committee to consider "ways and means by which the efficiency of hospitals in Philadelphia may be increased." An extensive study was made and the committee made three reports embodying the results of its study, together with an introduction on "The Principles of Hospital Efficiency" by the secretary of the committee. It is interesting to note that one of the most important findings of the committee was that no standards exist by which the efficiency of the hospital may be measured. The operating expense of one institution may be $3.00 a day for each patient and that of another a little over $1.00 per patient. The question naturally is raised as to whether the latter figure is a credit or a disgrace. It is pointed out that such a lack of standards is reflected in chaotic conditions. The committee stated that in 31 per cent. of the hospitals visited the records were so kept as to be useless for scientific purposes. Doubtless the conditions existing in this instance are very similar to those existing generally, so that there exists a most fruitful field for an elaborate and scientific investigation of hospital problems.

Whether such an investigation should be undertaken under the auspices of special interests by the government or by an association of hospital authorities may well be given the most careful consideration.

When we consider that there are nearly 7,000 hospitals in the country and that 9¾ per cent. of the entire population of the country annually receive hospital treatment we begin to realize the enormous amount of institutional work involved.

DISCUSSION.

MR. D. D. KIMBALL: Mr. Bartine's paper is the happiest possible combination of new suggestions and warranted warnings. A careful study of the article by every hospital building committee would result in a material improvement in the construction of new hospitals.

Especially to be commended is the advocacy of the employment of the thoroughly experienced architect, engineer and builder. It would scarcely seem necessary that the architect, engineer or builder should confine his practice to hospital buildings, for a general experience in other lines of work will bring to the hospital work much valuable information; but only those who have "gone through the mill" can appreciate the character and variety of the multitudinous problems peculiar to hospital building and the extent to which experience with these problems is valuable. The selection of the architect and engineer is so vitally important to the success of the hospital that no consideration of nepotism or friendship should govern the choice. The layman can hardly hope to visualize a building from the plans, as this requires a degree of experience not to be expected in those not engaged in some way in the erection of buildings. An ill advised selection of the architect and engineer will become evident to those responsible for the appointment only when the building has assumed concrete form and its larger defects have become irremediable. If these defects happen to be of such nature that the hospital loses a possible economy in operation or facility of administration, a permanent extra expense will be involved. It is beyond imagination that one who has designed a dozen or fifty hospitals, or who has designed the equipment for them, or who has built these buildings, should fail to gather experience and information of the greatest value to the new hospital. Is it to be wondered that a hospital building built by architect, engineer and builder without previous experience in hospital planning, equipment and construction should fall far short of the highest ideals? And yet new institutions are constantly being built under such conditions.

Added emphasis might be laid upon the importance of seeking freedom from all nuisances, emphasis warranted by conditions actually existing in some cases. Proximity with industrial plants must always be avoided; otherwise annoyance will result from noise, smoke and odors. The location should always be remote from power, gas or rendering plants. The possible future development of the surrounding property along industrial lines may well be studied.

Concerning foundations, the number of test holes or drillings should be such that complete information concerning the character of the soil under the entire building should be at hand. The contour of the rock is sometimes very uneven. Two instances may be recalled in which rock was encountered at grade at one portion of the building, and was more than thirty-five feet below grade at other points under the building.

That the extent and efficiency of the mechanical equipment should not be sacrificed for the ornamentation of the building, or for the increase of its size, apparently needs no argument. Nevertheless many instances can be cited where this has occurred. Often this is due to the attitude of the architect, whose interest in the appearance of the building externally and internally exceeds his realization of the importance of the equipment.

The facts relating to the isolated electric power plant are well stated. This subject is further discussed by the writer in a paper read at another session of this meeting.

Reference is made to the importance of preventing changes in materials from those specified. Are such changes urged by the contractor for the benefit of the building? Are they not almost invariably urged for the benefit of the contractor's pocket?

The price for the work which the owner pays to the contractor includes the cost of the materials specified. The builder contracts to furnish these particular materials. Why then should the owner pay for one material and be asked to accept another? If the contractor were required to rebate the full difference in cost between the materials specified and those he proposes to furnish he would promptly lose his interest in the substitution. This is a serious evil which should be curbed. It operates not alone to the harm of the owner but to the disadvantage of the best contractors.

Mr. Bartine has well stated the problem of concealed piping. It is to be noted that he gives as 4 to 5 inches the depth of the floor fill where pipes must be concealed. Certainly 5 inches is desirable in every case where pipes must be placed between the concrete floor slab and the finished floor. All of this space is necessary for the installation of heating and plumbing pipes and electric conduits. It is not alone a question of the space required by the size of the pipe; but the steam pipe must be covered with asbestos, it must be protected from the concrete by sheet metal arches, it must be given proper pitch for drainage and it must have freedom for expansion and contraction. Often one pipe must cross another or an electric conduit. No consideration of a slight extra expense for an extra inch or two of floor fill should be allowed to endanger the successful installation and operation of the piping system.

Concerning ventilation I would like to add to what Mr. Bartine has said something suggested to me by Dr. Miller's admirable paper on "Hospital Ventilation From the Point of View of the Clinician," read in the Section on Hospitals A. M. A. a year ago. In the system of artificial ventilation generally appointed to the hospital the trunk ducts system has been commonly used. Thus every room is served with air of the same temperature. In few cases the individual duct system has been used in hospital work, but in school building ventilation it is now being very generally used.

In the individual duct system a separate duct is carried from the fan or plenum chamber directly to the base of the vertical flue which rises to each room. The plenum chamber is divided into upper and lower parts, the temperature of the air passing through the upper chamber being slightly higher than that required for the ventilation of the rooms, and the temperature of the air in the lower chamber being approximately twenty degrees less. Connections are made from both of these chambers to the individual ducts with mixing dampers in each connection automatically controlled by a thermostat located in the room served. In addition volume dampers are installed in each duct to regulate the volume of air supplied to each room. Every mixing damper and every volume damper is placed directly at the plenum chamber, making for ease of adjustment and manipulation and assuring better attention on the part of the janitor. Such an arrangement has the merit of being easily intelligible to the janitor.

The chief advantage of this system, however, lies in the fact that exactly the required volume of air at the exact temperature demanded by any and every individual room may be had, as required.

One or two sides of a building may be subjected to the warming effect of the sun, while the other sides of the building may be subjected to a severe cold wind. Under such conditions the rooms subjected to the cold wind and shade may require an air supply at a temperature as much as ten degrees higher than the rooms on the warm, sunny side.

The installation of the individual duct system increases the cost of the ventilating system by 2½ per cent. in large buildings and 5 per cent. in small buildings; but inasmuch as the individual system is decidedly superior to any other system because it makes it possible to meet every varied demand in the different rooms, it is certainly well worth its cost. This system has little or no effect on the operating cost of the plant.

Many of the results credited to the individual duct system can be obtained by the use of the double duct system, but with a very slight saving in cost of installation and with the serious objection that it involves a more complicated system of duct work with mixing and volume dampers scattered all over the building. In many cases these dampers are necessarily placed in inaccessible positions; thus they are hard to get at and their location is often forgotten and more often neglected. For these reasons the system is much more difficult to maintain in an efficient condition, and the results obtained are correspondingly less satisfactory.

May I suggest also that the installation of a number of small fan units is much preferable to the use of a less number of large fans? The installation and operation of the smaller units involve less complication in design and operation; a small system is always more easily understood by the janitor, and a number of small plants rather than a single large plant will always be found a more flexible and satisfactory arrangement. Usually a sufficient saving in the cost of duct work is made to offset the slightly increased cost of a number of small units over the cost of a less number of large units. The use of small units permits of their distribution about the building in such a way as to involve less interference with the building construction and use of the basement.

From the standpoint of the engineer the method of operating room lighting proposed by Mr. Bartine is to be commended, for by such means the best illumination may be had at a reasonable cost and all the objections made to other methods of operating room illumination seem to be met.

To complete the clear presentation of the case of the electric generating plant it is only necessary to state that the slight extra steam pressure required for the operation of the engine involves no additional hazard, nor is the expense of generating steam at the higher pressure greater. Instances where such plants generate electric current at or near one cent per kilowatt hour are numerous.

Naturally the consulting engineer will agree with Mr. Bartine's statement concerning the use of manufacturers' specifications for equipment. And this is so because he sees more of the resulting misfits and extravagances resulting therefrom. But another source of evil in this connection is the occasional desire of laundry and kitchen heads for more apparatus or more elaborate and expensive apparatus than the size of the hospital warrants.

To emphasize the reference to openings for laundry and other mechanical apparatus may I instance a case coming under my personal observation recently? At a new hospital, costing three-quarters of a million dollars and not yet occupied, a large section of the laundry building wall had to be cut out in order to get the washers and mangles into the building.

No more enlightening table of costs than Mr. Bartine's has been presented. The adoption of the suggestion that the cost of every future building be so divided and analyzed would result in unexpected benefits. Possibly a further classification of the average costs might be made to advantage. By knowing the nature of the equipment in these different buildings and the different purposes served by the buildings it should be possible to determine a fair cost per cubic foot, as, for instance, the cost of a certain class of ventilation in a certain class of hospital. The writer has carried out such a plan in connection with school building ventilation with considerable success.

MISS WHEELER: I wonder if I might say just a word from the nurse's standpoint in regard to building and equipping a hospital. I think that often the equipment and the arrangement of that equipment is sadly neglected in building a hospital, and it seems to me that it is just as necessary as having an expert engineer and architect and builder, to have an expert who can plan and arrange the equipment of a hospital. For instance, in utility rooms, the utility room of a ward and the utility rooms connecting wards, they may be so arranged that it is impossible to do the nursing properly, absolutely impossible. It is so with the arrangement of a laundry. It seems to me it is necessary when one is planning a laundry to have an expert who will consider the arrangement of that laundry equipment from the standpoint of efficiency. The man who puts in laundry machinery has rarely a thought as to how it should be done so that the work may be done efficiently. I think these are all points which deserve a great deal of serious consideration in the building of hospitals. Also, for the future good of the hospital, too often its future growth is not provided for, especially in nurses' quarters. Rooms are provided for so many nurses; enough to take care of the hospital at the time it is built, but there is no thought of the future. With dining rooms and with maids' and with the employes' quarters this is also true.

SOME CONTEMPORARY MISTAKES IN HOSPITAL CONSTRUCTION.

By John A. Hornsby, M.D.,
Editor, The Modern Hospital, Chicago, Ill.

There is no doubt that we are developing some standard forms of hospital construction in this country; our errors in the recent past have been due in part to a too close adherence to forms of construction in Europe, where conditions and the processes and methods of work in hospitals, and the ideals that govern them, are radically different from those in this country; and partly, I think, to misunderstanding on the part of architects who are studying and working with hospital forms of construction.

Our chief error is due to our blindly following European construction and building our hospitals over large areas of space in pavilion form.

In Europe, labor is cheap, nursing has not developed as it has in this country; consequently, pay-rolls are low and the saving of time and energy does not appeal with such force as it does in this country. There are no elevators in Europe, as we know them; the people climb stairs and prefer horizontal methods of locomotion. Hence their low buildings, scattered over large territory. The comfort of patients is not taken as of so great account in Europe as it is here; in most European countries only the poor are cared for in hospitals; the rich are cared for in their homes, or so-called nursing homes. Consequently, it makes little difference if long distances must be traversed from the patient's bed to the operating pavilion and back again. The patient's comfort amounts to little in Europe as compared with the scientific achievements in hospitals, so that it is not uncommon in Europe to wheel patients long blocks in the open air from their beds to the operating room and back again. Too often the humanitarian side is smothered beneath the demand for scientific achievement.

In the Virchow Krankenhaus, of Berlin, fifty-seven buildings occupy a space of approximately sixty acres of ground, with a total capacity for each pavilion of thirty-two patients. All this means huge increases in the personnel required for maintenance of the hospital. In this country it would be impossible to perform our house keeping arrangements in such pavilions without a supervisor of the lower class employes and if we were to have fifty-seven supervisors in a hospital of less than 2,000 beds, and if other employes were required in proportion, the cost of maintenance would be absolutely prohibitive.

Unfortunately, some of those responsible for hospital architecture in this country have ignored these social, economic and administrative differences between this country and Europe and they have built structures, beautiful in form, attractive to look upon and wholly out of keeping with modern American demands for administrative economies, humanitarian ideals and scientific requirements.

The result of it all is that a revulsion has come upon us and we are thinking now in terms of the so-called block form of hospitals. It makes no difference whether it is to be a one hundred bed hospital in a rural community or a three thousand bed municipal institution; there is absolutely no reason for spreading out of the construction and there is every reason for building block structures where all the patients, all diseases and the sexes can be cared for under one roof, where every part of the institution can be reached by rapidly moving elevators, conveniently located, and where such physical service as water, steam, gas and electricity can be carried in channels in economically built conduits from basement to garret.

Even if we are to build our hospitals high and separate the various classes of diseases and the various classes of patients on separate floors and in separated units, instead of in specialized buildings, we can, by attention to the details of architecture, arrange for whatever segregation may be required.

There is no reason why an isolation department, even if there is need of a large one, cannot be made to occupy the top floor of a block hospital, or any intermediate floor, and yet there is no reason why segregation under such conditions may not be as accurately performed as though the building were far removed from all other patients. An outside and distinctive elevator can be run to the isolation unit, without any other connections;

clothes chute, dumb waiter and stairs for fire purposes can be arranged for this one unit alone.

If we admit generally, that light and air and sunshine are among our most potent agencies in the cure of disease, it stands to reason that the higher we go up in the air, the greater amount of these agencies can we command, so that again the high building appeals.

Special hospital construction is rather a new branch of architecture and those architects who would enter this field have not yet standardized their work. The result is that their operations are carried on somewhat differently from their approaches to other fields of their calling. If a great industrial corporation were planning the construction of a steel mill, or a mail order house, or a huge factory of any kind, they certainly would not employ an architect and tell him to build what he thought they needed. They would employ an architect and instruct him to design a building that would be described to him by the man or men who were intended to manage the business after the building was completed. The architect would not pretend to know anything about the special and detailed needs of a steel mill or a mail order house and he would take his instructions from someone detailed by the corporation who knew the work that was to be performed in that building after it was completed.

But architects have not recognized this method of procedure in approaching the field of hospital construction; I doubt very much whether it is their fault. If we have attained standards in hospital construction, there are only a very few men and women in this country who have been sufficiently trained, both in administration of hospitals and in the design of hospital buildings, and almost always the architect has been compelled to depend on his own devices and his own knowledge and observation. Too often the hospital architect is referred to the building committee, the members of which are too busy to devote any considerable amount of time to the work in hand, who have had no special training either in the planning of buildings or the reading of plans after they are made. Too often the hospital superintendent is of no greater help to them; he or she likewise, has had no special training in this field.

The result has been that architects, compelled too often to rely on themselves, have developed a habit of self-reliance and they are disposed to content themselves with visiting other institutions, getting blue prints covering their construction and then making the plans of their own institutions with this kind of information.

But almost every hospital is a rule unto itself and conditions that would prevail in one institution would not be present in another, so the architect's plans patterned after one hospital would not fit in the other.

Too often the plans that have been followed and the observations that have been made by the architect are predicated on poor construction in the first place; the building he has seen and admired may be a very bad piece of hospital construction and in following it he does precisely as the Chinaman did in the story who was handed a plate and was told to copy it. The plate had a crack in it and the Chinaman copied the crack as well as the plate.

I have known an architect to repeat a mistake in one hospital after another. He did it in the first case because he was given no efficient help by anyone who knew the purpose for which that particular thing was to be used after the building was done. After he had completed his work he left the building to be administered by someone else and he never knew that the thing he had done was all wrong, had cost a lot of money in administration and was a great inconvenience to everybody concerned. When he had another job to do, not knowing that his former construction had been wrong, he repeated it. By following out this mental process, the careful and observant hospital administrator can almost tell, after casually passing through a building, who had built it.

Another fault with our hospital architects is that they do not finish their work; a building may be designed quickly and built expeditiously up to the last finishing touches; the contractors collect their money, the architect his and all the construction forces leave the building, with a few details here and there uncompleted, awaiting perhaps some special material or the lapse of time for drying out. It is these end details that some architects seem never to finish and I have known not one but a number of hospitals in which the board of trustees or the superintendent had to finish the work with day labor or special contracts.

It does not seem to me that there ought to be any misunderstanding with architects. As a rule they are business men, perhaps more reasonable in their intercourse with other people than doctors or hospital administrators would be. Nor does it seem that there should be a difference of opinion as to where the architect's work begins and leaves off. I think architects should have intelligent, trained help in the designing of hospital construction and I think it is the duty of building committees and boards of trustees to see that they have such help. Every board, before beginning the work of building, or even the work of designing, should employ a good hospital administrator who knows the principles of designing, to go over its problem, see what the institution actually needs and then in conjunction with the architect sketch out roughly the principles to be incorporated in the construction. Such sketches should then be taken up with the people who are going to administer the hospital; see whether construction forms will meet their requirements in the simplest and most convenient way; weigh objections, sketch in acceptable alterations. Then and then only can the architect finish his plans and build his building.

There are two items in hospital construction that are giving more trouble at the present time than all others combined, viz., location and design of the main kitchens and the character of the various floorings.

Some years ago there came a fad for building kitchens on the top floor of hospitals. That fad died for a time but it seems to have arrived again and something ought to be said about it.

There is not one single tenable argument in favor of building hospital kitchens on the top floor. The one argument used, of course, is that odors rise and do not descend, and that hence in a hospital, where the kitchens are on the top floor smells of food will not permeate the house.

With a proper ventilation and cross-ventilation, in other words proper architecture, of kitchens located in the basement, there need be no odors. With vestibuled openings from the kitchens to the main corridors, and with good air draft in the kitchens, and with vestibuled opening to the dumb waiter outlets, the question of odors takes care of itself.

There are many reasons why kitchens should not be placed at the top of the house, the chief being that the top floor is the most desirable space in any hospital for the accommodation of patients. There is better light, better air, more sunshine, less noise and greater freedom from dirt.

When the kitchen is at the top of the house great numbers of people who have business in the kitchen and who have no business anywhere else in the hospital, will continuously prowl about, using the elevators and the stairs, bringing in dirt and meddling with the help and with hospital things. If the kitchen is in the basement these people are kept out of the rest of the house.

If the kitchen is at the top of the house great quantities of material must be lifted up, coal, food and food containers; dirt is carried about everywhere in transporting these supplies, garbage and refuse in large quantities must be carried down again after having been carried up.

It must be remembered that it is not only the kitchen areas that occupy space, but the dining rooms and service rooms of all sorts and for all classes of people, the administration officials, the nurses and the help. Dining rooms are occupied only about two hours out of the twenty-four. It is usually possible to light the dining rooms well even where they are located in the basement, by the use of full-sized windows and in some cases areaways on the outside, but even if artificial light must be used because of special conditions that makes less difference because of the short time use of dining rooms.

Hospital floors are the subject of continuous inquiry by those intending to build hospitals and our floors have not yet been standardized, and the fact that chemists, manufacturers, industrial workers of all sorts, are continuously offering new material for hospital flooring proves that the one acceptable floor has not yet been discovered and until that time comes it seems that we are reduced to the necessity to select different materials for flooring in different parts of the hospital. Wood must be regarded as impractical and unacceptable everywhere. In the first place it is almost impossible to buy well seasoned wood flooring, and where it can be obtained the prices are practically prohibitive. Wood flooring opens cracks during the dry process, dirt accumulates in these cracks, when they are washed, water gets in and makes a mud, a most acceptable abiding place for the germs of infection.

Marbles and slates are too costly for floors even if they were otherwise satisfactory, so that we are reduced to the necessity to consider composition floors. Of these there are three forms: (1) glass, including vitrified tiling, etc.; (2) cements and cement concretes, including terrazzos, plastic cements of magnesia and, (3) the mill-made fabrics, linoleum, cork carpet and rubberoids.

The vitrified tiles have been favored as flooring for operating rooms, dressing rooms and similar floors largely for the reason that they can be made in white and white seems to be the choice of color for these units. They are better than other floorings for these particular reasons only, because they are white and clean looking and there is no reason why they should be used in other parts of the house.

A number of manufacturers are supplying terrazzo, art marbles, mill molded with corresponding turn cove bases and made to be laid in decorative and artistic patterns. The art marbles are perhaps the choice for such show places as the front offices, front entrance and foyer. They are very pretty and more expensive than most hospitals can afford for use in any other parts of the house.

The mill-molded terrazzos are preferred by many good judges among hospital administrators. They come in shades of color, different sizes and shapes of blocks, the color depending largely on the kind of crushed stone used with the cement. The preferred shape is the six-sided slab, twelve inches in diameter. This terrazzo is also laid soft, troweled on the floor and sets in place. The objection to this is that almost always terrazzo floors crack with the settling of the building and it is impossible to mend cracks in plastic laid terrazzo so that they will not show. Where the twelve inch molded slabs are used, even if there is a crack a few slabs can be removed and replaced by others and the crack disappears.

These terrazzo slabs are perhaps the choice for kitchens, service rooms, corridors and stair landings.

In all the above places other composition floors are coming into use instead of terrazzo and a number of these floorings serve quite as well as terrazzo, but their value and the satisfaction they give depends so much on the workmanship in mixing the ingredients and the troweling in laying, that the manufacturers and the hospital people have many times disagreed as to the satisfactory character of this kind of flooring. No doubt a time is near at hand when these composition floors can be laid with accuracy so that they will become thoroughly standard.

For wards and rooms nothing has been found that takes the place of battleship linoleum. Cork carpet is too expensive to be used in large quantities; the rubberoids do not quite lend themselves to use in wards and rooms but many of these forms are being placed in elevators, stair landings and other places where neat appearance, resiliency and noiselessness are demanded.

For some years battleship linoleum was so popular for hospital purposes that a number of the manufacturers yielded to the temptation to sell their product before it had sufficiently matured. The result was that chair legs, bed casters and even shoe heels made indentations in the newly-laid fabric and battleship linoleum became for a time unpopular. It seems now to have come into its own again with more care on the part of the makers and more thorough seasoning of the cloth before it is laid, and especially has its popularity grown since definite specifications have been made for its laying and for the preparation of the sub-structure and the cove bases where it is to be used.

BOILER ROOM ECONOMICS.

By Thomas Howell, M.D., Superintendent, and Philip Murray, Engineer,
New York Hospital, New York City.

About ten per cent of the expenditures of the average hospital are for the engineering department. It is, therefore, apparent that this is an important department. As such it deserves careful study and oversight. In this paper the writers discuss some commonplace ,engineering subjects, but make no attempt to treat them in an exhaustive or scientific manner.

The question as to whether a hospital had better produce its own electricity is one which is occasionally asked.

This question has been raised more frequently of late because, in the large cities at least, so many business houses for reasons of economy, convenience, and cleanliness, or to utilize space more advtantageously are abandoning their electrical generating plants, and are buying their electricity from commercial plants. Their doing so naturally causes observing hospital superintendents to ask the question as to whether it would not be more advantageous for them to buy their current.

In this connection it must not be forgotten that the requirements of a business house or factory are very different from those of a hospital. The demands of a hospital are usually much more varied, and are continuous day and night, including Sundays and holidays.

While freely admitting that factories and business houses are frequently more satisfactorily served from a central plant it is nevertheless our opinion that hospitals, at least those with over eighty or a hundred beds, should produce their own electricity. Hospitals of this size will usually have heating plants, steam laundries, steam cooking apparatus, steam sterilizers, refrigerating plants, etc. These serve to create a demand for steam throughout every hour of the year.

The steam required by part of these activities at least can be used in making electricity, and this without any loss of efficiency. In this way, electricity is produced as a by-product, and at a very insignificant cost. This is particularly true during the winter months when a large amount of steam is required for heating purposes.

Strange as it may seem it has been proved that steam which has passed through an engine is more efficient for heating purposes than the same amount of steam direct from a boiler.

Mr. Wright, superintendent of the S. R. Smith Infirmary, Staten Island, reports that in 1912, the last year that the hospital purchased its electricity, its heat, light, and power cost was $8,068.21. In 1913, with its own electrical plant, the cost was $6,458.91, and in 1914 $6,369.89. This is a saving of over 21 per cent. Other hospitals have shown equally satisfactory results.

COAL.

Bituminous coal will give better results, pound for pound, and dollar for dollar, than will anthracite, but in many cities the use of bituminous coal is prohibited on account of its tendency to produce great volumes of smoke. Where it is not permissible to fire with bituminous coal, one of the steam sizes, or cheaper grades of anthracite coal, is ordinarily used. These are known as Pea, Buckwheat, and Rice.

The size and quality of the coal best fitted for its use must be determined by each hospital by actual tests. At the New York Hospital we have found by experience that the best grade of No. 1 Buckwheat is the most economical for our plant.

We pay about fifteen cents a ton above the regular price for No. 1 Buckwheat in order to obtain coal from a certain mine, because it gives us the best results. A trial of No. 2 Buckwheat, which sells for about fifty to sixty cents less a ton than the coal we are using, gave unsatisfactory results. Our experience with Pea coal was also unsatisfactory. It cost more per ton than the No. 1 Buckwheat which we use, and the number of tons burned was about the same.

What we would emphasize in connection with this subject is that every hospital should make careful tests to determine what coal best meets its requirements, and then to insist upon getting it.

FACILITIES FOR WEIGHING.

Some dealers are dishonest. Some dealers have dishonest employes. Sometimes honest mistakes are made in weighing. For these reasons no hospital which buys coal can afford to be without suitable wagon scales. We know of one large hospital which had no wagon scales because they were considered unnecessary and expensive. At the end of the year it was discovered that they were short nearly 1,000 tons of coal. It is unnecessary to add that an order for scales was placed immediately.

MECHANICAL STOKERS.

Mechanical stokers are occasionally of considerable service in bringing about boiler room economy. The Hospital of the Good Shepherd, at Syracuse, N. Y., installed a set, and in eleven months saved $3,600 from its coal bill. Dr. Pratt writes concerning it as follows:

"It burns only the amount of coal necessary to obtain the steam pressure desired. The cheapest kind of soft coal can be used. As it is a self-feeder, one man can easily take care of two boilers and also look after the engine room. The mechanical stoker has this additional advantage, that being self-fed from a magazine that is never allowed to become empty the cold air does not reach the fire nor metal work of the boiler, and so saves loss of steam and destruction of tubes and other iron work, as is the case when the door to fire box is frequently opened to throw on coal."

BOILERS.

Boilers must have sufficient capacity to produce the required amount of steam without forcing. They must be kept free of internal scales, and the tubes and flues must be frequently cleaned.

The brick work must be kept in good repair in order to prevent air leaks into the fire box and combustion chamber. It is very essential that the grate bars in the furnace be of a suitable design. If this is neglected a considerable amount of coal may be wasted.

The furnace doors should be tight, and only a sufficient admixture of air admitted to consume the gases leaving the furnace.

There should be a feed water heater of sufficient capacity to supply water to the boilers at about 200 degrees. Pumps designed to pump hot water are essential.

Much depends upon the fireman, and there are very few who are competent. A careless fireman will nullify all attempts to secure boiler economy.

When you inspect your boiler room observe carefully the work of the fireman. Notice whether he spreads the coal. To insure perfect combustion coal must be spread evenly and thinly over the fire. In cleaning the fires the fireman should do so as rapidly as possible, as the open furnace doors allow the cold air to rush in and cool the boiler.

Care must be taken not to dump unconsumed coal with the ashes.

It is very essential that the water in the boiler be kept at the proper level.

A damper regulator is necessary, as it prolongs the life of the boiler and effects a saving in coal. However, with a mechanical stoker burning soft coal it cannot be used, for it defeats the purpose of the stoker and produces great volumes of black smoke.

BOILER SCALE.

One cause of boiler inefficiency is scale. This scale consists of impurities which are precipitated from the water when heat is applied to it. Scale is familiar to you all. You have seen it in the steam kettle on the kitchen range.

Scale collects on the inside of a boiler, on the tubes, shell, and head. It acts to thicken these, and accordingly more fuel is required to produce the requisite amount of steam, as the heat must pass through the iron of the boiler and also through the scale, which is a poor conductor. It is apparent, therefore, that the more scale there is the greater the waste of fuel.

Many engineers favor the use of compounds in removing boiler scale. Our results with compounds have not been satisfactory because of their tendency to cause foaming in our boilers, and thus carrying the water from the boilers to the engines, a dangerous condition. Under certain conditions these compounds may be of service, but we have found it safer and more economical to remove scale by hand.

ENGINES.

Opinions are divided as to the most economical engine, but no matter what kind of engine is installed it must be given careful oversight in order to obtain economical results.

There is considerable loss of steam and consequently of coal when the internal parts of the engine are neglected. Care should be exercised in seeing that all valves are properly adjusted, and that the piston and springs are kept in proper alignment.

Leaking stuffing boxes and valve stems show want of care on the engineer's part.

It is very disirable that steam traps on high pressure systems be kept in good working condition, as they are a source of loss if not kept in proper order.

PUMPS.

Elevator, house, and other service pumps are often overlooked, and their leaking pistons and steam valves are a great source of loss that is not apparent to the casual observer.

EXHAUST STEAM.

With non-condensing engines exhaust steam is a fruitful source of loss, especially during the summer months. But as stated before, during the cold weather this steam can be used for heating purposes, for which it has been found more efficient than direct steam. Exhaust steam can also be used in the laundry drying rooms. It is not practicable to use it for cooking purposes. It should be, however, used in heating warming tables, etc.

One of the great uses of exhaust steam is in heating water for the house service. It is a decided waste to use live steam for this purpose.

At the New York Hospital water was formerly heated by live steam, and the results were unsatisfactory on account of the expense, and because the thermostatic control did not always control, and as a consequence the water was frequently either too hot or too cold.

Finally a hot water heating device operated by exhaust steam was installed, and while it has no thermostatic control it has proved very satisfactory.

This change resulted in an annual saving of approximately $3,000.

LAUNDRY.

In the equipping of a laundry plant it is desirable that each piece of machinery has its own motor attached, as in this way it is possible to operate any one machine without operating the entire plant.

Electrically heated flatirons and body ironers consume a great amount of electricity. At the New York Hospital we have found steam presses very much more economical than electrically heated body ironers, and also more useful and easier to operate. We estimated that our two electrically heated body ironers consumed about $3.00 worth of electric current daily. They were replaced with three steam presses, and the cost of operating these is not appreciable.

ELECTRIC LIGHTING.

When we used carbon filament lamps at the New York Hospital, and were perhaps a little careless generally about the amount of electricity consumed, our ampere meter during the winter months frequently showed that we were delivering 900 amperes of current. Since Mazda lamps of the Tungsten type were substituted for the carbon filament lamps, and other economies introduced, the ampere meter rarely indicates that we are using over 450 amperes.

Too little thought has been given to the lighting of institutions. In many instances the lamp fixtures are not properly located, and the number of lamps is too large or too small. For instance, in one of our small sterilizing rooms, which is very high, we had a cluster of eighteen lamp bulbs against the ceiling. By lowering the fixture we got just as efficient light with four bulbs.

MINOR ECONOMIES.

By sifting the ashes from the kitchen ranges, it is possible to reclaim fifteen to twenty tons of coal annually. However, where gas sells for $.80 or less a thousand cubic feet, it will be found much more cleanly and convenient and about as economical to burn gas in the kitchen ranges. We have done our cooking with gas for a year, and have found it very satisfactory. We should not consider again the use of coal in kitchen ranges.

To get the best results out of a refrigerating plant it must be carefully looked after. During the winter months when the demands upon it are very light the engineer should thoroughly overhaul it. It is particularly essential that he should see that the circulating water coils are thoroughly cleaned. If these coils are allowed to get choked up with sediment the efficiency of the plant is reduced to the minimum.

We have found that neglect to clean out the coils of our plant for six or eight months will reduce the efficiency fifty per cent. In other words, before the tubes are cleaned out it is necessary to operate the plant twenty-four hours a day, but after they have been thoroughly cleaned it is only necessary to operate the plant twelve hours a day.

It would hardly appear necessary to call attention to such obvious wastes as leaky pipe joints and valve stems, and improperly covered steam, hot water, and brine pipes. But there are many otherwise well managed hospitals where too little attention seems to be paid to these sources of waste.

Superintendents will do well to thoroughly inspect the hospital piping at frequent intervals. They should insist that the engineer promptly and properly repair all pipe leaks instead of resorting to tin cans to catch the drip.

If you are planning a new hospital insist that the steam, hot water, and brine pipes be so located that they are easily accessible for repairs and recovering. Pipes buried in the walls and floors have given us no end of trouble and expense at the New York Hospital.

It frequently occurs that the engines, boilers, dynamos, motors, refrigerating, and other machinery selected for a hospital lack in that they have no reserve capacity. This is a mistake. Machinery worked to its full capacity soon wears out, whereas, machinery worked below its capacity lasts a long time.

In the case of a machine worked to its capacity a little additional strain placed upon it results in a breakdown. Generally this breakdown comes at the most inopportune moment. The inadequate refrigerating plant breaks down during hot weather, and the inadequate heating plant during cold weather.

It is a pretty wise rule to figure out the plant capacity required, and then double it.

DISCUSSION.

Acting-President: We will take up the question of the new Constitution. After a great deal of difficulty, we have managed to get these copies before you. I have talked with a number of the members about the Constitution and those that I have talked to agree with me that there are further changes or amendments required before those are acted upon next year. That is, there is a feeling throughout the greater part of our Association that there is a certain amount of discrimination against the assistant superintendents of large hospitals in that they are not permitted to be on equal terms in the conduction of affairs in meetings of this organization and they do not feel like taking a part. I feel, personally, that a good many of the assistant superintendents of large institutions, or, in fact, most institutions which are large enough to require an assistant superintendent, have positions of sufficient importance to entitle them to active membership. I simply suggest this for your consideration.

Mr. Bartine: I did not quite catch the point that you brought out.

Acting-President: I simply mean that in those institutions which are large enough to have assistant superintendents the assistant superintendents are of equal importance in the hospital world as are most superintendents who are eligible to active membership, those men or women who are superintendents of small institutions. I feel that the assistant superintendent should not be discriminated against as against the superintendents of smaller institutions.

Mr. Bartine: Is that not rather leading? A great many assistant superintendents are very dear friends of mine, but why take in the assistant superintendent? Why not take in our associate members as active members? The Association is taking in dietitians and pathologists and medical men, and is more or less of a medical association.

Acting-President: I am simply putting in a word for the assistant superintendent.

Mr. Bartine: I did not intend to get up. It was forced upon me. Several ladies asked me to take the floor and call attention to the fact that it would be rather leading to take in assistant superintendents, that we also have dietitians and pathologists and doctors and trustees, and some superintendents of hospitals, I know, do not like the idea. In fact, a former President—I will not mention his name—very emphatically stated to me last year that he did not wish to attend the Convention in his own household, that he wanted to talk over matters that he did not care to discuss under such circumstances. Many superintendents do not care to talk over matters in a convention of this kind where their assistants are. You may feel that is all "rot," but unfortunately it is a fact and that statement came from one of the leading hospital superintendents in the United States.

Acting-President: I would like to hear from others on that point.

Miss Barrett: I think we all appreciate the point that we have some very valuable members in the Association in the associate membership list, but I fail to see how we can discriminate in favor of the assistants of large hospitals and not admit the assistants of smaller hospitals. There would be no end to the people that we might admit if we went on.

Acting-President: I did not know there were many assistant superintendents in smaller institutions.

Miss Barrett: I think that most hospitals have an assistant superintendent, or one who really plays the part of an assistant superintendent, who takes the duties of the superintendent in the superintendent's absence. I think the old Constitution states that those next in authority to the superintendent should be eligible for associate membership. That applies to large and small hospitals; it applies to a hospital of ten beds.

Acting-President: What was Dr. Peters' idea in regard to these printed copies, whether they should be submitted to us for our consideration and acted on tomorrow or tomorrow afternoon?

Dr. Hornsby: Dr. Peters did not ask about this.

Acting-President: What is the idea of the Convention in regard to this Report of the Committee on Constitution and By-laws?

Dr. Hornsby: The idea was, Mr. President, pretty definitely, I think, that on yesterday we did not know just what the changes were. If we had had an opportunity to read these proposed amendments, we had not done so and the idea was to get them before us in some sort of concrete form to discuss them. I must admit very frankly, perhaps shamefacedly, that I had not read them. I find here some things which I dislike very much. I do not think we have any opportunity to amend these articles and there are some things in here I would not like to vote on at this meeting. For instance, we are preparing here to provide an executive committee and a board of trustees, whose functions and whose lines of demarcation are not at all well brought out, are not at all clear. And we are proposing here that we may have extraordinary meetings of the Association on a call of ten people. I do not believe that the Association wants to have ten people call this Association together on short notice or in between times. Then, we are providing for the election of members of a board of trustees by the executive committee. I do not believe that it is the intention, I do not believe that the Association wants to have a responsible body, like the board of trustees, in which vacancy can be created by another body; and the duties and functions of the two bodies are not being clearly defined. I do not know whether I could have a second, but I do not believe that we are in shape to pass on these. If everybody else understands them, I am perfectly willing; but, frankly, I do not know enough about them to give a guess on them. I think that board of trustees is a very big question. I think that we ought to have a board of trustees, but I cannot conceive of a board of trustees and an executive committee created as they are created here without lines of demarcation, without an immense amount of confusion. I do not believe that we will hurt anything if we let these lay over again. I have no very pronounced conviction about it.

Mr. Bartine: I second the motion.

Acting-President: I did not understand that Dr. Hornsby had made a motion.

Dr. Hornsby: To get the matter before the house, I make a motion that these proposed amendments to the By-laws be laid over to the next Convention.

Seconded.

Acting-President: Is there any discussion?

Dr. Hornsby: Dr. Peters has just come in. I would like to know if he has something to say about it.

Acting-President: Dr. Peters, the motion has just been made and seconded, after some discussion, that there is a feeling here that the Constitution and By-laws in its new form is not the form that we wish it to be in, and that we would be taking hasty action by passing on it at this time. The motion has been made and seconded and is open for discussion.

Dr. Peters: I think it would be well worth while to do so, unless there is some emergency in regard to taking them up. I think we tinker a great deal with our Constitution and By-laws, and unless there is some very urgent reason for changing them, I think it would be well worth while to lay them over.

Acting-President: Any further discussion?

Mr. Bartine: Dr. Peters has undoubtedly made a very thorough study of this subject and he may tell us of some of the things that we should have in and perhaps we might discuss them at this meeting and between now and next year.

Question put. Motion carried.

PROPOSED PLAN FOR THE WORK OF THE SOCIAL SERVICE DEPARTMENT OF A STATE UNIVERSITY HOSPITAL.

By Louis Morrow, M.D.,
University of California, San Francisco, Cal.

The proposal I am making for a plan for the social work of a state University Hospital is based on conditions as they exist here in California. As there are certain phases of the work that are peculiar to a hospital so connected, these alone will be considered. The direction of the social work of the hospital is in the hands of an assistant in the Social Economics Department of the University. Because of this fact, our volunteers are largely students who are preparing to do social work. Many of these have had special training in statistics and all are trained to accuracy. By virtue of our connection with state commissions and institutions authorized by them, each student is allowed to take up the particular phase of the work he wishes to follow later. Those interested in Juvenile Court work are referred to the local courts, the ones interested in charitable organizations work with such cases as these organizations have sent to us for medical care, and for the students interested directly in medical social work there is service in the clinics and case work. We are planning for the coming year to make investigations into the role of disease in poverty and the economic causes of disease. This will include a carefully detailed study of the patient, correlated with his physical condition and his home surroundings as regards sanitation, overcrowding, disease and financial status including receipt of relief. This investigation will go, not only into the home of the patient and into his place of employment but frequently into the office of some charity. In addition to the charity cases coming to us we have large numbers of people of the middle class who are never recipients of relief but who cannot meet the usual expense incident to a long treatment. This class forms so large a part of our clinic that some plan should be made for them other than a free clinic maintained for the very poor. A thorough study of the clinic must be made, based on statistics as to what constitutes a living wage in California and on each individual case, taking into consideration the probable duration of the disease and the effect of such sickness on the family income.

As each patient is interviewed his occupation is to be ascertained, not in a general way but in detail both as to the exact part he takes in the industry and the place where he works, for industries vary greatly as to the danger of different parts of the work and as to the precautions taken by different employers for the safety of their men. The study of occupational diseases includes not only such as are caused by the more common poisons or irritants but takes into consideration any disease where the length of life of the worker or his efficiency in definitely lessened as a result of his work. The subject of industrial hazard will be taken up, as a study of the local industrial conditions in connection with the findings of the clinic. Such an anaylsis should help materially in placing the man who has already suffered from industrial disease and in getting the early case away from a dangerous occupation before he is permanently disabled. A careful analysis of the industrial situation will be useful also in placing men who are needing work. In connection with this phase of the work we will make the greatest possible use of the statistics already compiled by such state bureaus as are dealing with labor problems and questions of sanitation.

During the past year the hospital has given medical care to a large number of patients from the various local charities and institutions, and also to many who are charges of the state or of counties other than San Francisco. In order that the best possible results may be obtained from the medical treatment a social worker sends daily reports to each organization stating as fully as possible the diagnosis, prognosis (especially as to ability to work) and probable duration of the disease and directions for treatment; and the progress of the case is reported from time to time. With two of these organizations we have regular weekly conferences and meet others personally from time to time. Among those caring for children who are state charges we have had dealings with the State and City Widow's Pension Bureaus, the children's agents of the State Board of

Charities and Corrections regarding the care of children from orphanages and private homes throughout the northern part of the state, as well as from eight of the eleven licensed orphanages in San Francisco, with three of the four child placing agencies located in San Francisco, and with one State agency. In addition to these, children have come from the Juvenile Courts of San Francisco and Alameda Counties and from two of the outlying counties. Children, not state charges, and adults come to us from a number of other organizations. We hope to extend this type of work and to carry it into certain fields that have not as yet been touched. One of the most important of these is the after-care of the insane as they are discharged from our state hospitals. A physician has been placed at the University Hospital where she meets the discharged patients and their friends in order to follow their cases and give them advise as to care and to help find employment for them whenever possible. We should have social workers who plan for these patients and find homes and employment for those who have no homes. This should be done before they are discharged so that they may have no period of worry but feel at once that there is someone who has an interest in their well-being. Such workers should not only plan for the after-care of the patients but should look up cases as they are committed so that they may be sent to the hospital with such social history as will be of use to the medical staff and also when necessary see that the family of the patient is not left in want.

The occurrence of mental, physical and moral weakness in different members of the same family is so frequent that a system of registration of patients would give much valuable family history to the various institutions as well as help materially in planning the after-care. As a result of our connection with the various state units, the University Hospital should be in a position to give information as to what state institutions have dealt with any member of a given family. If private organizations care to register their cases more complete histories could often be obtained. But this latter would be unnecessary if local confidential agencies are established. Such a registry as I am here suggesting would contain merely the name of each member of the family with the age, address and occupation, together with the name of any institution that is known to have been interested in the case. Further information would have to be obtained directly from the interested institutions. Such information as the registry has, would, of course, be given only to properly authorized persons and the story of the patient would never become public.

To summarize briefly the plan I have outlined, I will say that it includes studies that involve the theoretical as well as the practical work of a clinic as it comes up day by day. The greatest value of such a department seems to me to lie in being prepared to be of service to the State, by co-operating with its agents wherever they have need of such help.

INTERDEPENDENCE BETWEEN HOSPITAL AND OUTSIDE WORK.

By R. M. Bradley,

Trustee, Thomas Thompson Trust, Boston, Mass.

There has been growing in the public mind a stronger consciousness that the hospital cannot be an isolated unit working independently in order to perform a certain function of usefulness, namely, the care and cure of those who come to its doors.

It has become more and more evident that the final test of a hospital's efficiency is not only how it handles the cases which it receives into its care, but what impression it makes directly or indirectly upon the **whole** sum of sickness and suffering in its community. From that point of view it can, under certain circumstances, be a total failure as to net results, while at the same time it is reasonably efficient in the details of its immediate work.

Just as we need a word to express the idea that a real hospital is not a building but rather the work of a devoted body of men and women who happen to be occupying a certain edifice, so we need a word to express the general community work in preventing and handling sickness in which work the hospital has its place. It is little or no credit to a community if a small part of its sick are well cared for and the balance grossly neglected, and the hospital must fill efficiently its proper place in a good general system covering the whole ground. With this more extended work the hospital work is interrelated in countless ways and the study of making those relations effective is only beginning.

The absorbing nature of hospital work produces with average human nature the defect of making the hospital too self-centered in its work. This is something so natural to a hospital management that the intelligent hospital head must constantly fight against it.

In this conflict it is possible that you can acquire some help as well as possibly some irritation from what I may call the stupid layman's point of view, a point of view so detached from your own that in its very ignorance of the many things that you know to be of vital importance it may possibly help you to see other aspects of the situation.

A canvass was recently made of two districts in New York City to ascertain, among other things, what impression the hospital work was making in certain classes of serious cases.

This canvass showed that out of a population of 17,000, 86.6 of the cases of sickness were cared for at home, and not in the hospital, and that out of the deaths from typhoid and pneumonia 70% of the typhoid deaths occurred in the homes, and 85% of the pneumonia deaths were in the homes, showing that a very large number of serious cases were not treated by the hospitals.

The question instantly asking itself from these figures is: by what system of selection did the hospitals receive some of these cases and by what system of selection did they not receive others? If, as seems probable, they missed cases that were in desperate need of their services, was it because they were filled by cases still more desperate, or if not, what was the cause? In other words, what was their relation to the whole problem of sickness and suffering, and what place, if any, did they hold in the comprehensive system for handling that problem if such system existed.

Another canvass was recently made of all ascertainable cases of sickness in a certain group of districts in central New York containing in all some ten thousand people. The circumstances of all ascertainable cases of sickness, some sixteen hundred in number, were gone into, so far as their conditions were ascertainable in order to find, among other things, what was the proper number of beds to provide in that community. The number of beds to be prescribed was figured out with great care and elaborateness from the cases apparently needing hospital care, but when conditions came to be analyzed the problem ceased to be in any degree so simple.

Areas were found where the cesspools taking care of an abundant water supply were closely intermingled with the old family well, whose sparkling waters possessed a tang lacking in the more insipid beverage offered by a town water company. Other areas existed where a sloping village site offered a succession of vaults and wells with the vault given the preference as to altitude.

Our figures called for additional hospital accommodation for the abundant typhoid patients, but maturer thought suggested that a few well adjusted drain pipes would probably be a more radical and less expensive remedy for that particular ill.

Similar veins of thought were opened in all directions. Certain poor girls had no proper accommodations in their confinement and more hospital beds were figured out. But was not a permanent asylum for these feebleminded and helpless victims, where they could be permanently cared for and protected, better than additional accommodations to enable them to burden the community with more offspring like themselves?

Many families had no fit dwellings to live in, much less to be sick or to die in. Was the remedy better housing or more hospital beds? Some of us were tempted to ask in our haste, "Is the hospital bed to be the place where all our other senses of social obligation shall slumber undisturbed until the day of judgment?"

Of course the answer to this problem is that the hospital provision must be an indeterminate quantity, tending to increase as we learn and teach the people the proper uses of the hospital; and tending to diminish as we learn to apply effective methods of preventing disease, and as we learn to abate those social conditions that deprive too many of our people of real homes in which to die or be born. It will tend to diminish also as we succeed in developing a comprehensive system of home care that will prevent our hospitals from being overloaded with cases that could be cared for properly in the home, or could convalesce there under care, thus making room for more urgent cases.

To put things more concretely, some time in the future we may have correspondence somewhat as follows:

"To the Secretary of the Wisdom Bank Foundation.

Dear Sir: I am directed in behalf of the Citizens Improvement Association of Anyville to seek your advice upon the problem of aditional hospital accommodations for our city. A large increase of our population is taking place as a result of the prosperity and expansion of our industries, and a number of our leading and public spirited citizens have requested us to ascertain what additional hospital accommodation should be provided for a town of this size, promising to contribute to a properly planned plant. Would it be possible for you to make an expert investigation of the situation and give us your advice upon that point?

Respectfully yours,
J. SMITH, Secretary."

The following answer results after due process:

"J. Smith, Secretary of Citizens' Improvement Association,
Anyville, State of Average.

Dear Sir: Pursuant to the request of your Association, several agents of our foundation have made a careful survey of conditions in your town, the results of which we herewith furnish you in detail in the appended exhibits.

With reference to your question as to the number of beds which a town of the size of Anyville should have for the accommodation of hospital patients, we offer a schedule of a few special accommodations which we believe should at once be added to your present plants in order to accommodate a certain limited number of cases that cannot now safely be admitted to those institutions and are a danger to the community if left outside.

In addition to that we would advise you that by instituting an inexpensive system of home care for convalescents the capacity of your present accommodations could, in our judgment, be increased by about ten per cent. and another fifteen per cent. of capacity could be added by giving the same home care to a class of patients who are sent to your hospitals, not because of the nature of their trouble but because of the difficulty of obtaining responsible and efficient care at home. This home care if properly organized through a health center could be furnished at a smaller cost and without an expensive plant. We regret to find that, in addition to these cases, there are other cases in your hospitals who are there simply because it is the easiest place to put them, regardless of the fact that there are numerous cases vitally needing the service of your institutions of which cases the management appear to be ignorant.

Although we believe that the use of your present plants can be made some thirty per cent. more efficient, present conditions in your city are such that some one hundred beds if provided could at once be filled with patients who have not now suitable care in sickness. The plant to accommodate these beds would cost some two hundred thousand dollars and their maintenance would amount to a charge of about $70,000 per annum, irrespective of physicians' services.

We hesitate, however, to advise you to undergo this expense without going into the following considerations. A certain proportion of these cases are due to entirely preventable causes among which are the following. A large part of your city still clings to vaults and wells and a steady supply of typhoid is the result, the condition of your milk supply is neglected, and, in addition to occasional milk epidemics, the children's ailments are very numerous. Your state offers no sufficient asylum accommodations for a certain class of feeble-minded women, and the calls upon your maternity wards are therefore unnecessarily large. Your people are uninstructed in the matter of avoiding the spread of contagious diseases and the work of your health officers is consequently largely perfunctory and ineffective.

One of the largest sources of candidates for hospital beds is due to your industrial conditions. Your prospering manufacturers are developing methods of organization that dispense so far as possible with skilled and well paid labor, and make use of continually larger quantities of labor willing to take low pay and to put up with extremely undesirable living conditions.

Some twenty-five per cent. of your population is already of the kind where the family occupy three rooms and take boarders. Your housing regulations are inadequate, and their enforcement is a farce.

Your operative quarter is squalid, neglected, unsafe and unsanitary and this condition seems to be on the increase rather than otherwise. It is obvious that a tenant of the usual dwelling in your main operative quarter has no fit place for either illness, convalescence or childbirth. If your city intends to perpetuate these conditions the providing of some hundred additional beds as a beginning would seem the conventional thing to do, as a step in the way of palliation.

If, however, the reduction of these conditions should commend itself to you, as more humane and more desirable, we recommend a more conservative programme.

This would embrace at the outset only the slight addition to your hospital plant above specified and its more efficient use. It would require first a campaign of health education among your people through preventive medicine, physicians, health officers and school nurses.

It would entail the removal of unsanitary conditions and reform in the administration of the health laws. There would also be needed better building laws, the forbidding of room crowding and the construction of decent and sanitary quarters for your wage earning classes.

It would necessitate the building up of a well organized health center which would have for its function the bringing together under a competent head for effective team play of the school nurses and the various kinds of nurses, graduate and non-graduate, who look after the sick. Such a center would act as a natural clearing house for service in sickness, being the first place of call in case of any illness. It would insure, so far as possible, that the cases requiring institutional care should receive it as soon as needed and that the institutions should be as promptly relieved of those cases no longer needing their service.

This health center should not be a charitable institution or it will not be generally used. It should be a place where the average citizen can go in sickness to obtain help in meeting his emergency needs, and can obtain the kind of help required, wether household help or nursing at a fair price. He would expect to pay his bills for this service as for his other ordinary requirements. Where charitable funds are needed to pay for nursing or other service they could be provided, not by nurses but by proper administrators of charity. The average citizen, however, will be found not to need or desire charity but to require some simple form of benefit insurance that will enable him to carry his family through those sickness emergencies which entail large and unexpected expenses irregularly distributed. He requires this kind of insurance just as he requires insurance for fires, accidents, or death and other emergencies. If he is not employed by a parasite industry that does not expect to support its employees, he can thus be kept from becoming a candidate for charity either in or out of the hospital. Also by this method your system can be given a sound financial basis for a full development, being supported by the classes who support themselves and the rest of the country.

Those of your citizens, however, who can afford it will still have ample opportunity to benefit the community by furnishing funds for better plants; funds for research and development work and funds for better salaries and retirement funds for the now underpaid workers in the field of hospital and nursing work.

We are able in this letter to give only a bare outline of the course of action and system recommended, but we commend to you further study of its practical application elsewhere, before a large amount of your resources are devoted to purposes that promise palliation rather than remedy. Very truly yours,

H. F. JOHNSON, Sec."

This is a very inadequate attempt to indicate the bearing of the larger problems involving the hospital. The question of what effect your hospitals are having on the whole problem is going to become more and more insistent and you have got to do your part in answering it. It means that more of you have got to be able to answer questions as to what happens to the cases that you do **not** get, and as to why you have so many cases put upon you that are not the ones most in need of hospital service.

I venture to bring to your attention one form of tabulated report that would tend to bring out how far your hospitals are answering this question of efficiency of **use** as well as those of efficiency of operation.

In almost every hospital there are the following classes of cases: The first I may call real hospital cases, namely those that cannot without undue trouble and expense, or without danger to the community be cared for outside of the hospital. There are plenty of these, if you only get hold of them, to occupy all the hospitals that we can maintain.

There are other cases that seek to enter the hospital for various reasons such as:—for the convenience, financial or otherwise, of the family; for convenience of the doctor; because outside of the hospital there is no adequate provision for nursing or care, because the patient has no proper home to be sick in, etc.

These cases could be classified and tabulated as follows: Real Hospital cases, Defective Care cases, Defective Home cases.

There is another classification, namely that of the hospital days during which hospital patients are kept in the hospital while convalescing because they cannot be sent out to proper conditions at home either from lack of organized care or lack of proper home conditions.

I do not know how many of you will venture to make such a classification, but I do not know that any hospital that does make it and makes it without fear or favor will add substantially to the efficiency of that hospital as a social force.

In addition to this I bespeak your sympathy and attention to the efforts that are now being made to co-ordinate and make effective in something like a comprehensive system the forces that have to do with prevention and handling of sickness both within and without the hospital.

We need a system that will cover the whole ground, not fragments of it, and we need to have the hospitals and their graduates take their proper places in organizing that system.

The stupid layman wants to know what impression you are making on the whole job, and you have got to answer that question.

Acting-President: The meeting stands adjourned until eight o'clock tonight, when Dr. Richard Cabot, of Boston, will be our guest.

THURSDAY, JUNE 24—EVENING SESSION.

Called to order at 8:15 p. m., by Miss Ida M. Barrett, Third Vice-President.

Miss Barrett: We are particularly favored this evening in having with us Dr. Cabot, of Boston, who will address us on "The Need of Pay Clinics for Persons of Moderate Means." Dr. Cabot needs no introduction to this audience. (Applause.)

THE NEED OF PAY CLINICS FOR PERSONS OF MODERATE MEANS.

By Richard C. Cabot, M.D.,
Massachusetts General Hospital, Boston, Mass.

The members of the American Hospital Association do not need to be taught (as the public does) :—

(a) That hospital clinics represent **organized** medical work while private practice is disorganized medical work.

(b) That in hospitals **diagnosis can often be** correct because it uses the laboratories, instruments and specialists there collected, while outside of hospitals in the **absence** of these resources diagnosis **cannot often be** correct.

(c) That this **limits correct diagnosis** and the treatment based on it, **to the rich** who can pay many specialists and **the poor** who attend the better hospital clinics, i. e. to a small fraction of the public.

(d) **That honesty, confession and correction of errors** and therefore progress are favored by the grouping of experts on friendly terms in a hospital,—while the isolation and competition to which the private practitioner is exposed bring a dangerous strain on his honesty and make it hard for him to progress.

The natural and necessary conclusion is that group diagnosis and group treatment—which are available on a large scale only in hospitals—are the right and the interest of everybody—not merely of the poor. This means the establishment for persons of moderate means of pay clinics manned by paid physicians.

Put the matter from another angle. Most of us hospital physicians do relatively accurate, scientific, high-grade work for our hospital patients and relatively inaccurate, unscientific, low-grade work for our private, paying office patients. Sooner or later this will become generally known. (I am doing what I can to make it generally known.) Then private patients will demand the best grade, the hospital grade of diagnosis and treatment, which they will have to go to the hospital's pay clinic to get.

All this is self-evident. Why has it not been put into practice? To some extent it has. The Mayo clinic, the George Ben Johnston Hospital at Richmond, Virginia, and Dr. Truesdale's hospital and office building at Fall River, Mass., have worked out the principle in one or another application. But an Out-Patient Clinic in a large city and taking pay patients has, so far as I know, been organized only in one city. Why is this so?

First, because of the timidity of doctors and hospital trustees. Doctors are timid about going into such an organization because they are not sure that the salaries will be sufficiently adequate and permanent to maintain them against the attacks of the outside physicians whose bread and butter such a pay clinic is sure to take away—in greater or lesser degree.

Trustees are timid because they are not certain that their charters enable them to maintain such a clinic and still escape taxation.

In certain cities I suppose both of these timidities are to some extent justified. The well-founded contempt felt by the medical profession for "lodge practice" makes most well-established practitioners bitterly hostile to all that seems to be "lodge practice" under another name. Thus all salaried work is frowned on, though the usefulness of health-officers, school-inspectors, factory-inspectors, college-health-officers, and x-ray-experts has been so obvious as considerably to undermine the intellectual defences of the contract-practice-hater. Nevertheless the professional opposition to the late Dr. Reinhardt as salaried head of the University of California Medical Infirmary System was intense and long continued. No physician can be safe in serving a pay clinic unless, before he burns his bridges behind him, he can be assured a salary such as he can live on. For in one way or another his private practice is likely to slip away from him. Safe then he cannot be without a comfortable salary, but as he is often far from safe in private practice he will be willing in many cases to take a paid position despite a certain amount of risk which he will prefer to the existing risks of private practice, because he knows that in serving the pay clinic he is constantly serving the public good and helping on a reform of which the public with incomes from $900 to $3,000 a year (or about nine-tenths of the whole public) are in urgent need.

Hospital trustees will likewise surmount their fears, I believe, when it is brought home to them that the pay clinic introduces no new principle. Our "free," out-patient clinic at the Massachusetts General Hospital, for example, now charges each patient twenty-five cents for the first visit and ten cents for each subsequent visit, exceptions of course being made of those really unable to pay these fees. The sixty thousand dollars thus earned annually is used to support the hospital, which nevertheless runs behind its income from this and other sources every year. But among the hospital's legitimate expenses (as the trustees and the public now regard the matter) are the salaries of various physicians,—the hospital pathologist and his assistant, the x-ray experts, the physician in charge of physical therapy and others. In many "free" eye clinics in New York City and elsewhere the physicians who diagnose and treat errors of refraction are often paid.

The principle of paying hospital physicians, in part, out of receipts from patients, is by no means new, then, even as applied to out-patient clinics. If there is no violation of charter in what is now going on, there is not likely to be any in a further extension of the hospital's usefulness along the same lines. The hospital plant—its out-patient department—now stands idle for a considerable part of the day. It is for the public interest to have hospital buildings with schools and churches as well—used up to their full capacity.

Moreover the force of public opinion, which ultimately governs what shall be considered "legal" on the basis of any written charter or constitution, is likely to favor a reform which will reduce the cost of medical service for the average man while improving its standards and will utilize the hospital plant for the good of the relatively many with incomes above $900 rather than for the relatively few who are poorer than that.

The great bulk of Americans who are neither rich nor poor are now getting the worst medical service that exists, worse than the poor who can go to "free" hospitals and the rich who can afford "private hospitals" or a group of high-paid specialists. The American people are not going to stand this state of things indefinitely, especially as the way out is obvious and simple.

Why has this need become suddenly so pressing within the last few years? Because it is only within that time that doctors and patients alike have come to realize, more or less clearly in different parts of the country, **that no one doctor is wise enough to make an accurate diagnosis.** He needs others to help him. This is not true of all cases, and no one can say in just what proportion of cases diagnosis is so obscure that no one man can make it without the help of radiologist, pathologist, surgeon, neurologist, etc. But it is true often enough to make group diagnosis a necessity.

Finally there is another reason for the speedy organization of efficient out-patient clinics for the moderately well-to-do. Sickness insurance, such as has been established in Germany and in England, is practically certain to spring up in this country before long. But it may rest with the medical profession of this country to decide whether it will lead in this movement and lead it right or whether it will be dragged in, protesting but helpless, like the English doctors.

If we lead this movement rather than being forced into it, we may be able to lead it right—that is, to organize it **with hospitals as the centre and dynamic of the whole,** so that public medical service may be of high grade, organized without the useless **waste** entailed by the shuttling of doctors back and forth from office to private houses; organized so that laboratories, the x-ray machines and the skill of experts may be available for the good of all.

Out-patient clinics of the type above described have already been organized, for diseases of the eye and of the genito-urinary tract, at the Boston Dispensary under the leadership of Mr. Michael M. Davis. The Massachusetts General Hospital has voted through its staff to establish such a pay clinic, and the trustees of the institution have just given their approval under certain limitations.

The plan then is reasonable. It is for the public good. It is in line with the development of scientific clinical work and it has already begun to take shape in Boston.

DISCUSSION.

CHAIRMAN: Dr. Cabot's paper is now open for discussion. Dr. Hornsby?

DR. HORNSBY: I hardly dare to discuss Dr. Cabot's paper. He speaks as a master. He has been at the work. I do not know so much about it. I do a good deal of theorizing. I am not quite sure that he has found the complete cure. I think he is on the way. Something must be done. We are certainly not doing all that medical science can do for that 90 or 95 per cent. of people who can pay something, but who cannot pay large fees. I have been very much interested in this topic, interested in hearing how Dr. Cabot proposed to approach his problem, ever since I saw his name on the program. I am wondering now whether he has got the details worked out. I think he is in for a good many falls before he is safely over the road. I have not quite so much faith—perhaps, because I do not know the Boston medical profession as well as he does—I have not very much faith in the ability of the western profession to work out a scheme of this sort at this time, and I think we shall have to wait in the west and middle west until a well-trained, thoroughly equipped medical staff, as in the Boston Dispensary and Massachusetts General Hospital and Out-Patient Department, have paved the way. I do not know what else to say about it. I had hoped that Dr. Cabot was going to give us blue prints and details.

Dr. Bachmeyer: I would like to ask Dr. Cabot one question. Will he tell us whether these pay clinics should be organized by doctors grouping themselves together under the supervision of universities, or whether the supervision of municipalities, or just how he would advise organizing one of these pay-clinics?

Dr. Cabot: I think, as Dr. Hornsby said, the chief thing is whether you can get a group of doctors that can hang together and have courage enough to face the storm that is going to break as soon as they attempt it. It might easily be done by the municipality or in universities, or, as with us, in a hospital. I think generally a hospital is exceptionally good ground for the springing up of the kind of friendship and close co-operation that makes men able to do this sort of thing, but I do not see why it should not be done elsewhere. I feel very sure that municipalities will do it unless private hospitals do it very soon.

Dr. Hornsby: Dr. Warner is here. Lakeside Hospital has got some schemes, and I would like very much to hear Dr. Warner's solution of the problem of pay-clinics. He knows more about clinics generally than the rest of us do in the west.

Dr. Warner: As yet, I have not touched the problem of pay clinics, and to me the problem is entirely separate from the dispensary as it is run today. I believe in dispensaries most thoroughly, and I believe that a pay clinic for patients that are above the free dispensary class and are below the class which can obtain proper medical attention are going to come and come soon. I wish I had one, and I shall do what I can to get one. The only point I would like to make is that I look upon the two institutions as entirely separate, managed under the one roof by the same head, perhaps, the same as we are managing hospitals and dispensaries under the one roof and by the same head, but different—that is, the pay clinic different, separate from the free clinic, quite as the hospital differs from the dispensary. Each is filling a distinct, separate need, but each is filling a need.

REPORT OF COMMITTEE ON OUT-PATIENT WORK.

COMMITTEE:

MICHAEL M. DAVIS, JR., Ph.D., Chairman, Director of the Boston Dispensary.

DR. JOSEPH B. HOWLAND, Assistant Administrator Massachusetts General Hospital, Boston, Mass.

MISS ELIZABETH F. MILLER, Superintendent Flushing Hospital, Flushing, N. Y.

DR. WILLIS G. NEALLEY, Superintendent, Brooklyn Hospital, Brooklyn, N. Y.

MR. G. W. OLSON, Superintendent Swedish Hospital, Minneapolis, Minn.

DR. RALPH B. SEEM, Asst. Superintendent Johns Hopkins Hospital, Baltimore, Md.

DR. ANDREW R. WARNER, Superintendent Lakeside Hospital, Cleveland, Ohio.

Reports of this Committee during the past two years have surveyed the field of dispensary work in this country; estimated the numbers of and classified the types of dispensaries; have stated existing conditions of organization and equipment so far as ascertainable; and have endeavored to enunciate some standards of a general and special character. Has not the time come to look for results? We think it has and we believe that results can be discerned. We do not pretend to attribute such results to the activity of this Committee; for the recent awakening in dispensary work is really the outcome of a general movement in both medical and lay fields towards a greater attention to efficiency in all kinds of organizations and towards emphasis on preventive as distinguished from merely remedial work. There are at least one thousand dispensaries of one or another kind in this country today, or ten times as many as in 1900. We have, however, no accurate list, and it is impossible to say how many new clinics have been established during the past year. We hope that before long a list of at least the dispensaries treating general diseases in this country may be made up. Undoubtedly there has been an increase each year in numbers; but the marked change of recent years has been an intensive development.

THE DISPENSARY OF THE SMALL HOSPITAL

At the Association meeting last year it was requested that this Committee give especial attention to the dispensary or out-patient department of the small hospital and of hospitals in the smaller communities.

Now the first question is: "Do these hospitals need out-patient departments?" A small general hospital, located in a large city, already well provided with out-patient clinics, need not usually develop a dispensary of its own unless it is so located as to be inconvenient of access from the other institutions, or unless it confines the work of its dispensary to the after-care of its own patients following their discharge from its wards.

But a hospital in an isolated section of a large city, and still more a hospital in a small community without dispensaries, needs to have an out-patient department and usually needs it very much indeed.

WHY THE SMALL HOSPITAL NEEDS A DISPENSARY*

The out-patient department is needed for two reasons:

1. To take care of patients following discharge from the hospital.

2. The out-patient department increases the public service of the hospital and its power to appeal successfully for financial contributions.

In nearly every community the poor need a dispensary; the charitable societies need it; and last but not least (even if they protest) the doctors need it, for a dispensary pools clinical material which the local profession needs for its own advancement. If the profession fears that a dispensary will take their paying patients, they can be assured that experience elsewhere has demonstrated that a well-managed dispensary can prevent itself and the local profession from being "abused."

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*A 100-bed hospital in a certain city started an out-patient department eight months ago. The chief of its orthopedic service told a member of this Committee recently that on a conservative estimate the out-patient department had increased the efficiency of his beds 100 per cent. This value would be higher in an orthopedic than in a surgical or medical service, yet it may be fairly expected that a properly organized out-patient department should increase the usefulness of ward beds in a general service by from 25 to 30 per cent. It does this, of course, by permitting earlier discharge and also by preventing relapses. An out-patient department is a substantial economy for a hospital.

After all, a hospital is founded to serve the public, and whatever increases its public service is an asset to its work. When a dispensary is needed, and a dispensary usually is needed in a city or town, a hospital ought to meet the need for the public's sake. In serving the public it will also serve itself.

In starting to establish an out-patient department, the superintendent of the small hospital will have to encounter the opposition which faces a new departure of any kind. How shall the out-patient department be equipped, how shall the medical service be arranged, how shall we admit patients and be reasonably assured that we are dealing justly by them and by the local profession?

PRINCIPLES OF ORGANIZATION

Avoiding detail, let us merely indicate these principles: Begin the out-patient department with the special aim of giving after-care to discharged ward patients; but do not, of course, refuse those who apply directly. Arrange the dispensary with as few different clinical departments as possible and as long services as possible. Make the dispensary staff one with the house staff, in personnel, as far as you can; but at least as to organization. Have at least one paid and responsible person in your dispensary, as an executive in charge, the superintendent's representative. Centralize admissions, charge of records, equipment and supplies in the hands of this person. Have a system of small fees for admissions and for medicines; remitting fees, of course, when patients cannot pay.

An out-patient department organized along these lines is likely to start well, perhaps to move slowly at first, but soon to prove its worth to the hospital and the environment.

INCREASING ATTENTION TO DISPENSARY SERVICE

A few years ago it was almost unknown in this country to have a trained medical or lay executive officer for a dispensary or out-patient department. Today the number of institutions which are assigning one of their permanent staff or employing a special person to give all or most of his time to the out-patient department or dispensary is considerable and is increasing steadily. Perhaps the most notable example in the last year is the dispensary of Rush Medical College in Chicago.

The Associated Out-Patient Clinics of New York city represent a concerted and serious effort, initiated by that pioneer in this field, Dr. S. S. Goldwater, to study cooperatively the dispensary problem of the metropolis. Results in improved standards in New York city are already apparent, as the second annual report of the Associated Out-Patient Clinics of New York issued last spring, bears concrete witness. The establishment of a Department of Dispensary Work in "The Modern Hospital" may also be mentioned among the developments of the year.

STATISTICS OF PROGRESS

In the autumn of 1914, this Committee prepared a brief question blank, addressed to superintendents of medical institutions, asking what changes or new features had been introduced into the work of their out-patient department or dispensary during the year 1914. About 350 of these blanks were mailed at the end of the year to the dispensaries treating general diseases. Our list was undoubtedly incomplete. Dispensaries treating only special diseases were purposely omitted. The responses to these questionnaires are so interesting that the Committee wishes to call them briefly to the attention of the Association. It will be borne in mind that the Committee hardly expected a response from such institutions as had no changes nor new features to present. As a matter of fact, 74 institutions answered, having something more or less definite to report, and a few others responded merely negatively. Thus 21% of the 350 had some definite and usually important development. The character and significance of these changes can be seen from a summarized enumeration.

First comes the addition of more space to dispensary work, usually by the assignment of more rooms to the out-patient department. Twenty-three of seventy-four institutions have added to the buildings, or have added rooms for the purpose of enlarging the out-patient department. Thirteen have added new clinics; chiefly dental clinics (4), syphilis clinics (2), prenatal clinics (2) and others (2). Improvement in laboratory and x-ray service is an out-standing feature. Thirty-five institutions have substantially improved their x-ray department, twelve of these having introduced an entirely new equipment. Similarly with laboratories: thirty institutions report important additions to the laboratory service available for the dispensary. Additions to medical or surgical equipment of more than routine nature are reported from seventeen institutions. Twenty-two report improvements in their medical staff or medical organization, largely in the adoption of continuous services and in correlating the out-patient service more fully with the service in the hospital. Another very striking advance is the introduction of Social Service. Sixteen of the seventy-four institutions established new social service departments during 1914; twenty other institutions have enlarged their department by the addition of one or more paid workers, and finally, six additional institutions had the establishment of a social service department under consideration at the close of 1914. Other points to which special attention is given are the admission system and the record system. One institution has established a clinic in the early evening for the purpose of meeting the needs of working people.

In a field of work that has been neglected as the dispensary has until recent years, it is certainly encouraging to find that one-fifth of the three hundred and fifty dispensaries took the trouble to answer and report important developments. Undoubtedly many of the superintendents who had something to say did not, for one reason or another, take the time to fill out and return their blanks. The figures we present, therefore, are less than the truth. It is very encouraging to know where the improvements chiefly lie:—more laboratory and x-ray service, fundamental modern needs to diagnosis; improvements in organization of medical staff; the introduction or expansion of social service, an item which appears more frequently than any other; the addition of more space available for dispensary uses; improvement in record systems. As would be expected, the larger hospitals report more concerning the out-patient department than the smaller ones do. The larger institutions, of course, have more resources and have been more stirred by the growing attention to dispensary service. Such movements generally begin at the top and work downward. Relatively few reports, not so encouraging, came from dispensaries unattached to hospitals.

The Committee believes that the returns from this questionnaire justify its statement or well illustrate it, that dispensary service is in a dynamic state. The time has gone by when the trustees of hospitals, the medical staffs and the superintendents can afford to neglect the dispensary. Dispensary standards are beginning to be established.

SOME DIFFICULTIES AHEAD

There are certain rocks in the road which we ought to look at before we venture forward at too high speed. Some of these rocks are real and some imaginary. One of the rocks that is not very real, but a real bugbear, which always looms up threateningly, is **dispensary abuse.** Another is the rock of **indifference.** Another is the **lack of accepted standards** in dispensary work. Another is **money,** or the want of it.

DISPENSARY ABUSE

As to dispensary abuse, so-called, it has generally been found that when the matter was actually studied the problem was smaller than it was expected to be. At least five organizations in four different cities have gathered material concerning between four thousand and five thousand patients which shows that the percentage of applicants for admission who are believed able to pay for medical service varied between a minimum of one-half of one per cent. to a maximum of seven per cent. The control of the admission of patients through a good admission system is necessary, and with a good admission system, dispensary abuse is controllable and can be made practically negligible. This has been demonstrated by at least a dozen dispensaries. While occasional cases of imposture will arise under the best of care in any institution, in general, much dispensary abuse is an indication of poor dispensary management.

RAISING MONEY

It is hard to get funds at any time, and especially hard in war times, times of fear for the future such as these. We shall never get funds unless we have a program as to how they are to be used. The man who formulates the program, the superintendent, is usually on the job. It is not always "up to" him to get money, but it is usually "up to" him to show just what the money is needed for. He is the gadfly to sting people so that they realize that a hospital needs an out-patient department; and a good out-patient department, if it is to have any. Belief that something needs to be done, tact and persistence in telling people about it, are the forces that raise money.

DISPENSARY STANDARDS

As to standards, the Committee reaffirms the very elementary minimum requirements of a dispensary outlined in the report of last year and are reprinting them, in response to a suggestion, as part of this report.

RECOMMENDATIONS

1. Every dispensary should have a central authority in control. This authority should be exercised personally by an executive officer to whom all clinical departments should be responsible in administrative matters, including the admission of patients.

2. The medical service should be as nearly continuous as possible, that is, it should change as infrequently as possible. The medical service of an out-patient department should be correlated closely with the service of the hospital.

3. Every dispensary should employ at least one salaried person, on full time, for clerical and statistical work of the institution. This person may well be called registrar.

4. Fee system.—A system of fees paid by patients at their various visits, for medicines and for special treatments, is desirable, not only as a financial measure, but because of its reaction upon the patients themselves and because of its stimulus to good administration.

5. Statistics.—Every dispensary should record the following statistics:

New patients (for each clinical department).

Total visits paid by new and old patients together, for each clinical department and for the dispensary as a whole.

The new patients should be divided into males and females, and of these the number of children under .... years of age should be noted. The dispensary should state the age below which patients are considered children, as this age varies in different institutions. (See Appendix No. 1.)

Classifying patients according to "white" or "colored" is not considered important by the Committee, except in certain portions of the country, where conditions may make this worth while.

6. Every dispensary should have a card index of its patients, filed alphabetically, each card containing, at least, name, address, and age, as identifying information.

This card index should be for all clinics together, and should be kept in a central place, preferably in conjunction with the admission desk.

7. Every dispensary should have an isolation room or booth, in connection with the admission hall, for the immediate temporary isolation of patients suspected of having contagious diseases.

8. Every dispensary, in its clinics for medical diseases, should have a general physical examination for all patients, as part of its routine.

9. The members of the medical staff of a dispensary should have laboratory facilities for at least the following:

Urine tests.

Blood counts.

The simple bacteriological determinations, especially sputum examinations and throat cultures.

Wassermann tests.

10. Facilities for cystoscopic work should be provided in genito-urinary and gynaecological clinics.

11. Facilities for x-ray work are essential.

12. At all examinations of females when exposure of the body is necessary, a woman attendant should be in the clinic.

13. Every dispensary should have some social service work.

14. Every hospital maintaining an out-patient department should keep the accounts of the out-patient department separate, so that its cost can be accurately stated.

15. Every dispensary should have in some central place, a registry book, in which the members of the medical staff are to record, at each session of their clinic, their names, the hour of their arrival and the hour of their departure.

We would call attention to some of the standards of special clinics enunciated by the Associated Out-Patient

Clinics of New York. Their reports have gone into some details which are based on local conditions in New York and are of doubtful application elsewhere; but all will profit by reading and studying them. We affirm the need for further study of dispensary work and for formulating more detailed standards in its various branches. To that end we have appended to this report two special studies, —one a brief outline of the principles under which a follow-up system for dispensary work should be established and maintained, the other, a special study of clinics for syphilis and gonorrhea with reference to equipment, organization and general relations to the public control of these serious diseases.

SPECIAL STUDIES

The reasons which have led this Committee to take up these two points for special study will be interesting.

1. **Follow-Up Systems.**—A follow-up system, in principle, transforms an out-patient department in which patients are seen as material to a place in which serious effort is made to secure the patient's cure. Without a follow-up system, the primary purpose of the institution is merely the temporary aid of the patient and the furnishing of clinical material for physicians and medical students. The principle of the follow-up system is that the patient must not discharge himself. His disease, if important enough to treat at all, is important enough to treat well, not merely to be diagnosed and prescribed for. He must be made to understand that the physician and the institution as a whole are interested in him, and by educational work must be brought back as often as is needed, not more often merely to swell the number of visits. The details of such a system are details merely. The principle is all-important.

2. **Clinics for Syphilis and Gonorrhea.**—The Committee was led to take up the special study of clinics for syphilis and gonorrhea because these diseases are rapidly rising to a position of prominence in the public mind, parallel to tuberculosis, from the public health point of view as well as the clinical. For the protection of the community these diseases need treatment. Dispensary clinics are a means of furnishing treatment which compete with the quack and the patent medicine vendor. Dispensary clinics must be established or enlarged to

meet public demands for more adequate treatment of venereal disease. As this is apparently a growing public movement, we have gathered material showing the standards to which dispensary clinics treating syphilis and gonorrhea can and should conform.

CLIMB ON THE BAND WAGON

For indifference to the needs and problems of dispensary work there is no longer any excuse. Hospital managers, superintendents and staffs can no longer afford to give all their attention to the hospital and leave the out-patient department half-starved. While we have not yet fully formulated dispensary standards, the importance of dispensary work is already recognized by many of the leading institutions of this country and the number is increasing every year. The time has come when visitors to the hospital are asking to see the out-patient department and as visitors and possible contributors do that, the heyday of the dispensary grows near.

The message for 1915 is: Wake up! Bė busy! Study the dispensary; its needs, its opportunities. Work to meet them. The endeavor is practical and quite necessary.

APPENDIX I.

WORKING STANDARDS FOR CLINICS FOR SYPHILIS AND GONORRHEA

The Dispensary Committee of the American Hospital Association and others have in the past two years presented figures indicating a phenomenal growth in the number of dispensaries, facts indicating a general broadening of the field, evidences of tendencies toward better equipment, and a more general recognition of the value and importance of out-patient work. There has been considerable written about standards, efficiency of work, better methods, and extensions, which have on the whole given rise to a general optimism and feeling that dispensaries were making general and rapid progress. Some have thought the time to outline definite standards already here. To get some evidence on the exact situation comprehensive questionnaires were sent to a selected list of the most progressive and best dispensaries of the country, covering the treatment of cases of gonorrhea and syphilis only. This limited field was selected partly on account of its especial importance and partly to enable us to secure more definite data. The best institutions were selected that we might learn of the best work that is now being done. Eleven replies were received. The following brief resume of these will disappoint the optimistic in certain respects. These dispensaries have evidently grown faster in size and in equipment than in improving and testing the quality of the medical work done.

In the matter of organization ten named the man responsible for the executive and general control of the dispensary. The department organization for the treatment of these diseases was as follows: Two treated gonorrhea in both sexes in a single special department; nine treated the males in the genito-urinary department, and the females in the gynaecological department. Nine had single definite departments responsible for syphilis; one by a special department, three in the genito-urinary department, and five in the dermatological department. Two of the eleven, however, treated syphilis wherever it appeared in any of the clinics, which means that when there are throat symptoms, it is treated in the throat department; where eye symptoms appear, in the eye department; visceral symptoms, in the medical department; and when the brain and cord become involved the patient goes to the nerve clinic. Such a system provides always treatment for symptoms, but no one responsible for the treatment of cases without definite symptoms, and no one responsible for cures. The periodic treatment of symptoms may give good experience for physicians and make a supply of good teaching material, but one may properly question its value to the afflicted individual or to public health and welfare.

Five gave patients infected with gonorrhea and six those with syphilis, simple printed statements explaining the nature of the infection, necessary precautions to protect others, and directions in hygiene to help cure—just 50 per cent. If the patients were married, eight make more or less effort to protect the mates and to bring them under examination or, if necessary, treatment; two do nothing at all, and one did not answer this question. Five of the dispensaries reported that they had the privilege of admitting proper cases of these diseases to hospital wards, five had limited facilities, and one had none at all.

It is surprising to find that two of this small list of the best venereal disease clinics do not keep individual card records of the cases of these diseases, and only four had used their records for the purpose of making any studies of any kind. This reflects no credit on the institutions or those responsible for them when one considers that there are as yet no standards and no accepted or approved methods to guide the work. It is watch it and think, or flounder behind the screen of professional ethics and general indifference and this when 3,000,000 sick poor come to the dispensaries of the United States annually in confidence and in trust.

The situation in regard to equipment is more hopeful: Trustees have evidently responded to the needs of the situation better than clinic physicians. All eleven had facilities for sterilizing instruments, for Wassermann tests, and for salvarsan treatment; all but one had a dark field microscope and facilities for complement fixation tests; all except two were provided with cystoscopes. The essential technical equipment for diagnosis was thus provided in practically all of these clinics.

The situation is much less satisfactory when we consider medical results. Six reported the percentage of syphilis cases making only one or two visits in figures: these figures varied from 32% to 41% an average of 39%. Actual counting evidently shows up about the same results everywhere. Three could not answer the question, and two stated that the number of such cases were "very few" in their clinics, but only one of these two so reporting kept individual records and neither had made any studies of these diseases or had any co-operation with health boards in the supervision of cases; one of them had no follow-up system at all, the other depended in a general way on the visiting nurses. One could not give the number of cases treated in the year; another treated a total of less than two hundred.

Six of the eleven replied that syphilis and gonorrhea were reportable diseases in their state and one that it would shortly become reportable. Four of the clinics were situated in states in which these diseases are not as yet reportable. The co-operation of the local boards of health to enforce treatment was reported as obtainable in the same six cases.

Only three dispensaries reported that facts and figures computed in their clinics for gonorrhea or syphilis had been used in the interest of public health in the general campaign against these diseases. Two gave no answer, and six answered in the negative.

The efficiency of the clinics maintained for the treatment of the venereal diseases must be measured by their results on the individual patients, i. e., cures, and by their work as agencies to promote public health and prevent disease. The writer knows of no figures based on actual counts showing the percentage of cures of syphilis accomplished in dispensaries, and the two dispensaries who have reported actual counts of the cures of gonorrhea cases practically agree: one cured 12 per cent. and the other 11.4 per cent. of arbitrarily selected series of cases. Consider with this the fact that only three of the eleven reported that facts and figures collected in their clinics had been used in the interest of public health.

We must admit that the present degree of efficiency of such clinics is far from satisfactory, and that there is a responsibility resting squarely on every dispensary superintendent and physician of the country to bend every effort to improve it.

In addition to furnishing good service the dispensaries of the country must have a combined capacity equal to the need of society for such service. How large a proportion of our population now need dispensary service is a much debated question, but there are conclusive arguments and successful practical examples of the good that may be done by extending the dispensary limits far beyond the present general belief as to their proper location. Dispensary work must become broader and reach more of the people now in the unfortunate position of being too poor to buy their medical needs and too industrious to be indigent.

APPENDIX II.

PRINCIPLES OF A FOLLOW-UP SYSTEM FOR A DISPENSARY

One of the important problems in dispensary work is the large number of patients who pay but a single visit, when the nature of their ailment is such that repeated visits and further directions are necessary if any beneficial results are to be expected from the treatment prescribed. As an aid in the solution of the problem, a "Follow-up System" has been devised and introduced in different dispensary departments and has proven effective in largely diminishing this waste of effort and in securing fuller control over the course of treatment. While the method used in following patients must vary somewhat according to the special needs of each clinic, the general plan is as follows:

For each patient, whom it is desired to follow, a card is made out with the patient's name, address and number of his history.* The card is ruled into small squares which are numbered from one to thirty-one across the top of the card, indicating the days of the month. At the left of the card the months of the year appear. By drawing a line in the proper square the doctor may indicate the date on which he desires the patient to return for treatment. This card is filed under the day indicated, either in a drawer or in an "Index Visible." When the patient returns, the card is again attached to his history for the doctor to mark the date on which he wishes to see the patient again. If the patient fails to return, his card appears in the file at the close of the day. Usually after waiting two or three days for the patient a card is sent

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*A form of follow-up date card and of post card are printed below.

Ad

No

191	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
Jan.																Jan.
Feb.																Feb.
Mar.																Mar.
Apr.																Apr.
May																May
June																June

	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Jan.																	Jan.
Feb.																	Feb.
Mar.																	Mar.
Apr.																	Apr.
May																	May
June																	June

Form of Follow-up Card—Front Side. (Original size 3x5 inches.)

BOSTON DISPENSARY.

25 BENNET STREET, CORNER OF ASH.

Department .... Room No.....
To: ....
Please return to see the Doctor before 10 A. M. on........

Bring your Dispensary admission card with you.

Form of Postal Card.

reminding him of his dispensary appointment which he has not kept, and impressing upon him the importance of doing so. A post card with a reply section attached may be used, on which the patient may reply and state how he has been since his last visit if it is impossible for him to return.

It has been found by experience in several dispensaries that about 50 per cent. of the patients respond to the first postal card; for the others more than one postal card, a personal letter, or a visit by a social worker may be necessary to secure results. The percentage of patients who never return varies from 10 per cent. to 30 per cent. The amount of effort spent in securing the return of a patient should be determined by the doctor, according to the medical needs of each case.

DISCUSSION.

Mr. Davis: It is the hope of this Committee that the Association will vote that the Committee be continued and that an appropriation will be made of $250.00 to carry on its work, which will include particularly the preparation of a full and accurate list of all the dispensaries in the country, which does not now exist. We feel that this would be of considerable value and well worth the necessary expenditure.

Miss Barrett: You have heard the report of the committee on out-patient work. What is your pleasure?

Dr. Hornsby: I am not up here for my health or pleasure, I do not want to be here, but I am asked to disgorge $250.00. The Committee with the long name on Preventive medicine had $250.00 given to it by the Association two years ago, and Mr. Davis, who is a member of that Committee, has had one eye on that $250.00 ever since, and now he wants it. We have not spent it. We have been doing a good deal of talking, and talk has been cheap; in fact, we have not done very much else. Mr. Davis has done most of that; now, he wants to be paid for it, and he wants it in the shape of the $250.00 which we have, to be transferred to his Committee. Frankly, I think he will do more good with it. Really, speaking seriously, I think that the work his Committee is proposing to do is work that very much needs to be done, and if it is the pleasure of the Association our Committee will be very glad to have that $250.00 transferred over to his account, the account of his Dispensary and Out-Patient Department Committee.

Mr. Bartine: If that is considered in the form of a motion, I second it.

Chairman: It has been moved and seconded that this money be transferred from the Preventive Medicine Committee to the Dispensary and Out-Patient Committee. Those in favor, signify by saying aye. Those opposed, no.

Motion carried.

THE PURCHASE OF HOSPITAL SUPPLIES.

By Louis H. Burlingham, M.D.,
Assistant Superintendent Peter Bent Brigham Hospital,
Boston, Mass.

Dr. Burlingham: I have just started through the audience two sets of forms. The forms on yellow paper are quotation forms; the forms on white paper are tables that I shall refer to later, tables which give the seasons and prices of fruits, vegetables and fish. I would not want to claim that anybody by reading these tables could become an expert purchaser, but I have found them helpful.

A well-known physician has said, "When I know very little about some subject and wish to learn something about it, I write a book on it." It was with this in mind that I accepted the invitation to write a paper on the purchase of hospital supplies. In all administrative work, experience is a great asset; nowhere is it of more value than in the purchasing department. A monograph could well be written on this subject by one with adequate experience. I shall attempt to set down only a few facts which have come up in my experience and which I hope may prove stimulating.

In 1904 Dr. H. B. Howard read a paper on this subject at the Sixth Annual Conference of the Association of Hospital Superintendents. As I read this article I was struck very forcibly with the fact that the methods in use at the present time at both the Massachusetts General Hospital and the Peter Bent Brigham Hospital practically follow the same principles, though several minds have been brought to bear on this subject. Changes in details and refinements, of course, have been introduced. There is still the weekly marketing day for perishable food-stuffs as meats, butter and eggs, vegetables, and fruits. The comparison book is still in vogue, as is the frequent inspection of the store, and the purchasing is done by a member of the administrative department, no longer the superintendent, but an assistant who has had some training in this work. The price book is now kept in the form of a card index, and if by chance a rarely purchased article should not be listed in this file, it can readily be found in the bill file under the name of the firm.

The store book is replaced by a perpetual stock inventory. This system may be described briefly as follows: All goods as received are inspected as to condition, and weighed or counted by the store-keeper on arrival, and entered on a receiving sheet, which is sent to the book-keeper's office, a carbon copy being retained by the store-keeper. All bills are checked in the book-keeper's office by the receiving sheet. Nothing leaves the store but by requisition. A card is kept in the office for each article. On the card are entered the receipts and disbursements, so that at any moment the amount on hand in the store is shown.

Gauze and coffee do not now need to be purchased annually as we can get quite as good prices in smaller quantities through the Hospital Bureau of Standards and Supplies in New York.

And right here I wish to say a word about the Hospital Bureau of Standards and Supplies, though I hold no brief for it and our institution has no vote in its management. The Massachusetts General Hospital has proven that the amount saved in money by purchases made through the Bureau is fully equal to the annual dues, and to this must be added the great benefits that accrue through having a carefully determined standard in so many lines of goods.

We still see salesmen but once and then ask that matters of interest be sent to us by mail.

Our method of procedure on marketing day is as follows:

The telephone operator writes down on forms specially prepared to permit easy comparison, the prices quoted her by three or four firms for meats, poultry, vegetables, fruits, butter and eggs, pork products and fish. We accept quotations only from first-class firms, who know that we wish quotations only on first-class goods. The prices quoted can be checked easily by reference to the price-list published weekly by the Boston Chamber of Commerce, or by the lists which appear in the daily papers. A short examination of the lists enables one to determine where he will probably buy, and lay out his route of travel accordingly. The personal inspection of beef, lamb, mutton, veal, the sampling of butter, fruits and some vegetables before placing the order are points we consider of great importance. Nearly an hour is spent in traveling to and from the market and somewhat over two hours in the actual purchasing. Thus the morning routine work and the marketing can be accomplished by 1:30 p. m. The goods are all in the store and ready for inspection by 5 o'clock. This inspection is to make sure that deliveries correspond with purchases and allows a more careful inspection of goods bought from samples.

We buy our beef whole, and prefer corn-fed steers, weighing 800-850 lbs., well rounded in the hind leg and loin, forequarters plump, and avoiding those with lean necks and large shins. The suet should be well distributed and not laid on in heavy layers outside the muscle but should show a general mottling of fat on cut transverse section; there should be a sufficient covering of fat on the inside of the ribs. A market man of wide experience states that in old or grass-fed animals the choicer cuts are depreciated in a much larger proportion than the better ones. We like to see the meat of a cherry-red or lighter color, the fat not too yellow. In younger cattle, the inner side of the ribs has a reddish hue, and the tip of the pelvic bone is supposed to show a softer cartilage covering than in older animals. If buying only hinds, other things being equal, buy the left as they are hung up, as the kidney suet on this side is several pounds lighter than the other. It goes without saying that sides of beef should hang for four weeks or rather more to attain their finest flavor and tenderness. Full corn-fed beef, as compared with grass-fed or part corn-fed, has a better, redder color, called "bloom" by the market men, and when cut the surface does not seem to sink but almost to protrude from its surrounding ribs and fat.

Frozen beef may at times be as much as a cent a pound cheaper than fresh meat, but freezing seems to be a greater detriment to beef than to any other meat, because of the loss of tissue juices when the meat is thawed, and because frozen meat cannot be properly aged by hanging. When beef, which has been frozen and thus thawed, is struck several times sharply with the hand, the cut surface shows a weeping of tissue juices.

Many of the general statements made in regard to beef apply to lambs, mutton and veal, though we do not feel that they are injured quite as much by freezing. Mutton should weigh 65-70 lbs. dressed. Corresponding to the steer, the wether sheep furnishes the best mutton. Lambs should weigh 35-40 lbs.; genuine spring lambs show a square surface covered with cartilage when the second joint is broken; after they are a year old this joint becomes round. Another point of difference is that when the hoof is removed, in the young animal it shows a toothed surface but covered with cartilage; in the older animal this toothed appearance can be produced artificially but, of course, there is no way of covering it artificially with cartilage. Veal should weigh 80-100 lbs., and be 4-6 weeks old. We find pork loins weighing 10-12 lbs. usually the best. Freezing does not seem to injure pork loins especially.

The statements I have made in regard to frozen goods apply only to products that were frozen when in prime condition. Goods which have been frozen after the process of decomposition has begun, cannot be too strongly condemned.

We all wish to have as great variety in our menus as possible, but we never can get away from the daily per capita cost. Food in its natural season is always better than that which is produced under artificial conditions or held in cold storage, though both of these may be very good.

I have found the accompanying tables of much use in determining the right times to purchase fish, fruit and vegetables.

By the use of these tables we are able to furnish a satisfying amount of these products when they are best in quality and lowest in price. The fish table enables me to tell also if the shrinkage in amount received, compared with the amount ordered, is due to dressing, or to short weight.

The quantities of vegetables received can be checked up by comparison with a list furnished by the local Sealer of Weights and Measures. This list gives the weight of a bushel, peck, and quart of practically all materials sold by dry measure, alphabetically, from apples to wheat, including altogether 54 different items.

On the first of each month we ask three standard firms to bid on a list of groceries. We ask for quotations on first quality goods, but state that we are willing to be informed of any "good buys" that we can be offered. Inasmuch as we know the quality, we place the orders according to the prices submitted. This enables the

FISH

	Seasons	*Prices*	*Percentage of waste*
Bluefish	Apr. to Oct.	10 to 18c	10%
Butterfish	May to Oct.	8 to 15c	10%
Cod	All year round	3½ to 8c	8%
Clams	All year round	90c per gal	
Clams for steam	All year round	$2.00 per bu	
Finnan Haddie	All year round	8 to 12c	
Flounders	All year round	4 to 8c	10%
Haddock	All year round	3½ to 8c	10%
Halibut (large)	All year round	10 to 20c	7%
Mackerel (med.)	May to Oct.	12 to 30c	10%
Jack Shad	Feb. to June	10 to 20c	10%
Roe Shad	Feb. to June	12 to 30c	10%
Swordfish	June to Oct.	12½ to 30c	20% Bone
Spanish Mackerel	All year round	10 to 30c	10% [out
Smelts	June to Mar. 15	10 to 20c	20%
Sea Trout	All year round	6 to 20c	20%
Western Salmon	All year round	12½ to 30c	15%
Oysters	Oct. to June 1	$1.10 to $1.50 Gal.	
Quahaugs	All year round	$1.50 to $2.00 gal	

FRUIT

	Seasons	*Prices*
Bananas	From Jan. to Jan.	$ .02¾ to $ .03½ lb.
Berries, Straw	" Feb. to Aug.	.10 to .35 qt.
Black	" Aug. to Oct.	.10 to .20 qt.
Rasp	" July to Sept.	.10 to .20 pt.
Blue	" June to Sept.	.10 to .20 pt.
Cantaloupes	" May to Oct.	2.00 to 3.50 crt.
Cherries	" June to Aug.	.10 to .25 qt.
Currants	" July to Aug.	.06 to .18 qt.
Dates	" Nov. to June	.06 to .08 lb.
Figs	" Nov. to June	.10 to .18 lb.
Grapes, Natives	" July to Jan.	.10 to .20 basket
Malagas	" Sept. to Mar.	3.00 to 6.00 keg
Grape Fruit	" Jan. to Jan.	2.00 to 5.00 box
Lemons	" Jan. to Jan.	2.00 to 4.00 box
Oranges	" Jan. to Jan.	1.50 to 4.50 box
Peaches	" July to Oct.	.75 to 1.75 basket
Pears	" July to Mar.	.75 to 1.75 box
Pineapples	" Jan. to Jan.	2.00 to 5.00 crt.
Plums	" July to Nov.	1.50 to 3.00 crt.
Rhubarb	" Feb. to Aug.	.01 to .15 lb.
Watermelon	" July to Oct.	.35 to .60 each

VEGETABLES

	Seasons	*Prices*
Asparagus	From Mar. to July	$1.50 to $3.00 doz.
Beans, String	“ Jan. to Jan.	.50 to 4.00 bu.
Shell	“ Aug. to Nov.	1.00 to 2.00 bu.
Lima	“ July to Feb.	1.00 to 3.00 bu.
Beets	“ Jan. to Jan.	.50 to 1.50 bu.
Cabbage	“ Jan. to Jan.	1.00 to 2.25 bbl.
Cauliflower	“ Sept. to Apr.	1.00 to 2.50 bu.
Carrots	“ Jan. to Jan.	.50 to 1.00 bu.
Corn	“ July to Oct.	.75 to 1.75 bu.
Celery	“ July to May	1.00 to 1.75 doz.
Cranberries	“ Jan. to Jan.	4.00 to 8.00 bbl.
Cucumbers	“ Jan. to Jan.	.40 to 1.50 doz.
Dandelions	“ Mar. to Aug.	.50 to 1.50 bu.
Egg Plant	“ Jan. to Jan.	.75 to 2.50 bu.
Lettuce	“ Jan. to Jan.	.25 to 1.00 bu.
Mushroom	“ Jan. to Jan.	.75 to 2.00 basket (3-4 lbs.)
Onions	“ Jan. to Jan.	1.00 to 2.00 bag (2 bu.)
Parsley	“ Jan. to Jan.	.50 to 2.00 box
Parsnips	“ Jan. to Jan.	.50 to 1.50 box
Peas	“ Apr. to Sept.	1.00 to 3.00 box
Potatoes	“ Jan. to Jan.	1.50 to 5.00 bbl. .50 to 1.00 bu.
Pumpkins	“ Sept. to Jan.	.50 to 1.00 bu.
Radishes	“ Jan. to Jan.	.20 to .45 doz.
Romaine	“ Jan. to Jan.	.25 to 1.50 bu.
Spinach	“ Jan. to Jan.	.25 to 1.50 bu.
Squash, Summer	“ Mar. to Sept.	.75 to 3.00 bu.
Native	“ Aug. to July	1.00 to 3.00 bu.
Tomatoes	“ Jan. to Jan.	.75 to 4.00 bu.
Turnips	“ Jan. to Jan.	.40 to 1.00 bu.

firms to know just where their bids are too high, and yet inasmuch as there are only three competing firms, each gets an order that is worth striving for.

Canned goods are purchased yearly from samples furnished through the Hospital Bureau of Standards and Supplies and from two or three local dealers. We retain unopened cans of each variety so that we can compare the goods as delivered, side by side, with the original samples.

On all sides we hear the call to standardize, and we are trying to answer the call. We have found that marking all materials suitable for this purpose with the date they are put into commission, very serviceable, and lately we have been adding the initials of the firm from whom they were purchased. As we use a marking machine for all goods passing through the laundry, this adds an infinitesimal amount of labor. Articles of metal or wood are easily marked by means of steel stamps; for wood we also use, when more suitable, a burning brand.

We are fortunate in being able to take our ten day discount on every bill where it is allowed.

Generally speaking we have not found it profitable to try to beat the market by laying in large supplies when prices seem favorable, though at times we are able to make quite a saving in this way.

HIGH IDEALS IN NURSING.

By Mrs. Alice H. Flash,
Superintendent of Nurses, Massachusetts Homeopathic Hospital, Boston, Mass.

This is not the place to indulge in familiar generalities about the ideal nurse—what she is or is not,—but rather to discuss how we, real, practical people, in the most real and practical of callings, may employ the imperfect facilities at our command to bring out of the crucible of the training school a nurse with ideals, even though she may not be one. When, with honor, dignity, and enthusiasm, we have trained her to use her hands, taught her to use her head, and inspired her to use her heart, we will have accomplished our purpose.

We have made a tremendous start on the road of standardized nursing education, but the goal is still far, and, at present, the education and technical training of nurses must, to a great extent, be governed by existing local conditions. As ambitious and progressive nurses, we must stand for the highest and best, but as superintendents we must sometimes compromise with circumstances in the training of head and hand. But the training of hearts is strictly our own domain, where we are hampered only by our own short-comings. Here is the soul of the training school.

And so, if in this paper I speak little of the educational and technical equipment of the ideal nurse, it is not that I hold these things less high, but that experience has taught me that it is in the less standardized side of a nurse's training, which, for lack of a better term, we call the ethical side, that we seem most in need of council. We must learn to train the woman in the nurse. It is a significant commentary on existing methods that graduate nurses are rarely criticized for lack of skill, but almost always for lack of tact.

We cannot control all the elements that go into the character of an ideal nurse, but we may, if we face our responsibilities vigorously, influence them. We must first make it our business as individuals to attract to the training school educated women of good home traditions. It has seemed sometimes that, perhaps, some of us have put an exaggerated emphasis on this much discussed requisite of education,—that a knowledge of Latin conjugations is not a vital requirement for doing a surgical dressing. In all the discussions we have, perhaps, lost sight a little of the fact that it is not merely what education **is** that we need, but what it **implies**: home training, parental ambitions, greater stability of purpose, more settled standards of conduct. To us, therefore, the high school diploma is more than a guarantee of a certain amount of book knowledge,—it is a symbol, a symbol of the American home from which comes the woman we want for a nurse. It is an imperfect measure, of course, but at present it seems to be the only one practically available.

In drawing to our schools a desirable type of candidates, we should study the methods of an efficient salesman. He takes his goods to market, and if no market exists, he creates one. We have not sought intelligently the sources of ideal supply for our schools, nor have we made any particular attempt to stimulate them. We have taken what has come along, have done the best we could with it, and have blamed our failures on the quality of the raw material.

The time now is ripe for vigorous action. Educated women everywhere are looking about them for active means of self expression such as is offered by our profession with its noble traditions and practical possibilities. We must seek out these women and make our profession known to them. We have agreed that the American colleges offer a practical and fertile source of material to the training schools, but our agreement has not functioned extensively in vigorous individual action. Discussions on how to train college women are less valuable to us at the present time than workable suggestions on how to get them.

In various states, notably in the west, superintendents of training schools have given so-called vocational addresses before the girls of the different state colleges. It is astonishing how little they knew about us and more astonishing still that, in view of the direct results attained more of us have not tried to apply the ideas and methods of these progressive women.

Miss Parsons of the Massachusetts General Hospital offers an illuminating experience and example. She has addressed the students of all the women's colleges of Massachusetts, setting forth the opportunities of the training as a preparation for life, and of nursing as a practical career for an ambitious woman. She has educated the colleges on the subject of the nursing profession. A majority of the nurses in her school today are college women and Miss Parsons is not over sanguine when she foresees the day when college training will be a requirement of entrance.

The enthusiasm and eagerness felt by a candidate when she is accepted are too precious not to be utilized. This is the time for the future nurse to imbibe our traditions and our ideals. She should be given a definite list of books to read: a life of Florence Nightingale, a life of Clara Barton, a history of nursing, a history of the Red Cross. She should be directed to review fractions and percentage and ordinary high school anatomy and physiology, but, under all circumstances, she should be required to provide herself with copies of the standard nursing periodicals from which she will gain more than from any other source, a sense of the bigness and broadness, and the strong vitality of the profession as evidenced by its organizations and their varied fields of usefulness and aspiration.

It is impossible to over-emphasize the importance of early impressions on the probationers. They have such good intentions, these girls, vague, of course, and sentimental, and a little absurd sometimes, but to us, as teachers of hearts, infinitely valuable. Ours is the task to preserve their enthusiasm through the trying probation period, to keep alight the flame of altruistic spirit, to glorify hard and disillusioning work.

Ward work, so-called menial work, is our first big difficulty. It is hard to make institutional housework the expression of high ideals. Quite properly there is coming to be less and less of this in the training, but—also properly—it still has its place in the routine. We make it clear to the probationer that she, as a nurse, will always be responsible for every detail of her patient's surroundings affecting his mental as well as physical comfort, and that such detail must be a part of hospital routine if she, as a graduate, would recognize and deal with it as part of duty.

By making the cleaning of a bath room the first lesson in thoroughness, we instill the lesson that there is but one standard of work; neatness must be neatness, cleanliness must be cleanliness. Cleaning the bath room may at first seem menial, but we show that it is really a test of character, of that sense of responsibility for homely detail that indicates capacity for critical emergency. A maid can put a ward in perfect order, we point out, but we expect a nurse to do more than that. She must leave behind her not only physical order, but spiritual calm. This is the measure of nursing efficiency, the difference between menial work and nursing.

You must not misunderstand me when I say that we do not believe very much in the formal teaching of ethics to probationers. Lectures on nursing ideals never made an ideal nurse. Ours is a profession of practice and its very act must be an expression of its ethical standard, its very duty an application of its ideals.

We must of necessity have a talk or two on hospital etiquette, but they should be human and reasonable, stating, not bare rules, but the simple underlying causes that make necessary certain principles of organization and management. Do not depict hospital discipline as a blind, relentless monster, but as a just and balanced system evolved from long experience and founded on the peculiar exigencies of hospital conditions.

Yours is the responsibility whether the young nurse regards the hospital authorities as enemies to be circumvented, or as friendly co-workers for a common cause.

During the probation, a woman must prove herself to us as a woman, must prove her personal no less than her mental and technical fitness to uphold the honor of the hospital and of the profession. We have no rules in the nurses' hall. We have the traditions of all good American homes, and we expect in the nurses the standard of conduct of all well-bred women. The training school is not a school of deportment, and a woman who comes to the age of entrance without having acquired a sense of fitness in manners and in conduct has no place with us. It does not seem to me that the probationer who persistently tucks her napkin in her collar will make the kind of nurse we want to send out into the world, nor does it seem to me that it is my function to instruct her in this matter.

We do not believe in a great deal of comment on conduct during probation. We believe that our standards should be made clear, our spirit demonstrated by example. But only by letting the probationer show in her own way what is in her of discrimination, taste, and common sense can we judge of her fundamental fitness for the nursing profession. But we hold toward her always an open mind, giving her every opportunity for observation and adaptation and, in the final judgment, we give her every credit for such powers of perception as she may have shown. As soon as we have permitted her to put on the cap of our hospital, the responsibility is ours and ours alone.

The student nurse, if we would join in her fairmindedness and honor, must understand from the beginning that her relation with the hospital is a perfectly dignified, well-balanced business arrangement whereby she gives three years of service in return for technical training that lifts her forever from the ranks of unskilled labor. The contract is without obligation on either side except for its consciencious fulfillment. The responsibility for this rests on the superintendent of nurses, who must maintain always the balance between students with rights to be considered, and workers whose services may be commanded. On the maintainance of this balance, rests the whole structure of our training schools.

There are many details of the hospital's obligation to the student nurses that admit of no argument obligations that must be scrupulously discharged if the hospital would exact its own obligation of earnest inspirited service. We are all agreed that the nurses should have a definite curriculum, a high quality of instruction, living conditions that measure up to a high standard, but agreement as a body will do nothing without vigorous action as individuals. Our ideals must truly be expressed in works. If you have not a tabulated record of actual hours of theoretical and practical work to compare with the statements of your curriculum, if you are requiring your nurses to spend their off-duty time in attending classes, and requiring them to sit through badly prepared lectures either over or under their intelligence, if you are expecting a proper standard of conduct without providing a proper standard of living, you are failing in your duty, and failing in the courage, the firmness, and the persistence that you are here to inspire. The self-administered assurance that existing conditions are the best you can do will not exonerate you.

As we give high ideals of justice in order to inspire them, so must we ourselves give enthusiastic and sympathetic service if we would receive it. When a nurse's work begins to lose tone, when her technic threatens to become perfunctory habit, and her interest in the day's work to become blunted by routine, do not think you can give her back her inspiration by lecturing her on professional ideals. A little personal pressure will accomplish more toward enlivening her spirit than all the high sounding phrases you can muster. Go often to her ward, watch her at her work, drop in a word of praise here, a casual comment there—with **your** sympathy stimulate the failing springs of her sympathy.

Hospitals make exacting demands on the women in their service, but it is not fair to a student nurse to make her, during her training, an alien to all the interests of life outside its walls. Indeed, we must not do so if we would have our nurses well rounded women capable of meeting the myriad exigencies of their professional lives. The hospital life, the actual physical weariness at the end of the day's work, precludes our going out into the world to meet its interests. But there is no reason why we should not permit them to come in to us.

We touch here on the difficulty of the superintendent coming in contact with the nurses in her personal capacity. It is neither desirable nor possible for the superintendent to be "one of the girls" at night in the home, and still maintain the fine edge of dignity when on duty in the hospital. The usefulness of the head nurses in creating in the home an atmosphere to nurture and develop the woman in the nurse is handicapped by the same conditions. A house mother, a woman of lofty standards and elastic expressions capable of stimulating a simple and wholesome social and intellectual life seems the ideal solution. But, for the present, she is only for our large, well-endowed schools. The rest of us must exert ourselves in directing our available facilities to the best advantage.

In the home itself, in the group spirit of the nurses, we have an immense unused energy that invites careful study and direction. Perhaps I had better say here that neither experience nor experiment have justified any belief that the principles of student self government could or should be applied to any angle of the training school that touches even remotely on the hospital and its requirements. But in the idea is an ideal that is worthy of study and of adaptation to certain phases of the life in the home. Such suggestions as are here made are based on that ideal and are put forward only as general ideas to be formulated and developed according to specific requirements.

Class spirit has been little utilized by us except in maintaining the rule of seniority, but it may be made to serve not only as a proper means of self expression to the student body, but as a means of relieving the superintendent of a considerable amount of detail. Each class should be represented on a house committee of three, the members chosen as may seem expedient. Through this committee the student body approaches the superintendent with its ideas and suggestions on all matters not of discipline but of social life. Through this committee the superintendent advances her own projects of a similar nature, giving latitude in detail and execution, both of which are entrusted to the house committee and its numerous self-appointed sub-committees.

Let this committee be responsible for the management of informal talks on current events given at regular intervals by local club women always willing to demonstrate their altruistic spirit.

Turn over to it the care and energetic development of a periodical library including the best daily newspaper and the standard nursing journals.

Let this committee or its aides serve tea one afternoon a week in the nurses' sitting room where they may drop in in their kimonas or in uniform as they come and go from duty.

Let each class give an annual tea to the other classes, this to be given in the parlors and each member of the hostess class having the privilege of inviting a friend or two outside the hospital.

Let each class have an annual lecture during the winter, the subject chosen from a list submitted by the superintendent. A variety of timely and stimulating subjects on which volunteer lecturers may be secured suggest themselves:

Nursing in Foreign Missions.
Settlement House work in the large cities.
Infant Welfare work.
The Red Cross.

The superintendent herself may give a tea in her rooms once a year to each class. Have an assistant, a graduate nurse, with interesting experiences to talk about. In every way, from your best gown to your warmest spirit of hospitality, give the little party the atmosphere of a private home and not of an institution. But remember that compulsory pleasures are a sad business, and every one of these things will fail of its purpose the moment it becomes even remotely obligatory. In the measure that anything of this kind is not yours, but the nurses' social expression, will it prove valuable to you as a means of softening routine and of instilling a knowledge and appreciation of social amenities.

At first thought, it would seem that in the troublesome matter of discipline in the training school, there could be no ideals,—only dire necessity. But there is discipline and discipline—a discipline of expediency that makes its object sullen and resentful, and a discipline of thoughtfulness that stimulates the latent or flagging sense of responsibility. Until we have cast out the former and achieved the latter, we have something to work for. Suspension, as the most available instrument in the hands of a superintendent, has, unfortunately, been used with more frequency than intelligence. Although the suspended nurse may recognize the justice of your judgment, she rarely, on her return, falls wholly back into the step and spirit of her work. Indefinite suspension has advantages over definite, for, thereby, the offending nurse may be put on her mettle to show by her attitude and her conduct that she is worthy to resume her responsibilities. But even indefinite suspension should only be used for extreme cases of deliberate neglect of patients; even then it is a poor expedient, and to find a practical substitute for it is something to be thought about.

For thoughtlessness or for single acts that might be accidents, it is hard to find a satisfactory measure. The ideal discipline in such cases is a punishment that fits the crime, that causes the nurse to make amends for what she has done. When a nurse's error has caused trouble to a patient, she may properly be required to special him on her own time, giving him all possible attention until every vestige of her mistake has cleared up.

Not long ago, on a busy day at the out-patient department, a nurse burned a woman's arm with carbolic. An instant's confusion of bottles and the damage was done.

She was a good nurse, but this could not pass. For two weeks, she was required to employ her daily hours off duty in visiting the patient, dressing her burn, caring for her and helping her. The nurse learned a lesson in human sympathy and self-denial, the patient had her faltering faith in trained nurses restored, and no one felt any resentment.

The most difficult cases we have to deal with are, after all, the inevitable breaches of decorum that occur in the best of homes, and which must be met if we would preserve their tone. But cannot many of these things be approached with a certain restraint and with a saving suspicion of humor? I have never forgotten the suppressed laughter that convulsed the training school when, in my student days, a superintendent made a dramatic scene at prayers with a beer bottle she had found under the windows of the home. I always wondered why she didn't leave it there.

A superintendent will always find that hasty, unintelligent punishments visited on the grown women in her charge will react on her own influence. If she would make her own influence stand for justice, she must not permit tale bearing, nor act on any suspicion that comes to her from any source whatever until she personally has investigated. No nurse should be condemned until she has been heard in her own behalf. Then, since these are schools of nursing, and not of manners and morals, the judgment may properly be referred to the offender's parents or to those responsible for her deficient standard.

A nurse in an isolated ward admitted that she had chatted with an interne for an hour at midnight. She also admitted that she had not been brought up to entertain young men in her home at that hour after her parents had retired. Then and there her father, a doctor in a nearby suburb, was notified of her breach of conduct and, at his request, she went home the next day on her hours. I do not know what happened at home, but I do know that that nurse has never since shown the faintest interest in internes.

The whole vexed question of the relation of doctors and nurses rests largely on the character and conduct of the superintendent. More in this than in any other phase of life in the training school is her example all powerful. A superintendent and her staff who have for themselves anything less than the highest womanly standard of personal and professional dignity, prove themselves unworthy of the high trust of their positions.

Perhaps I have spoken more of ideas and methods than of ideals, but we all know that ideals without works do not last very long in the business of nursing. If we feel that ideals are one thing more to be added to a crowded curriculum, we will never attain them, but if we make our ideals the vital spark of our nursing consciousness, they will become the guiding light for our every problem. Let us approach the problems of our training schools with ideals that express themselves in active, energetic efforts to better conditions. Only by so doing may we inspire in our nurses the enthusiasm, the honor and the resourcefulness that are their ideal equipment.

THE COMPANY HOSPITAL.

By R. W. Corwin, M. D.,
Chief Surgeon Colorado Fuel and Iron Company,
Pueblo, Colorado.

[Dr. Corwin had intended to use a large number of lantern slides and by their means to conduct the convention audience through the Minnequa Hospital at Pueblo. Want of facilities in the convention hall prevented this demonstration, greatly to the regret of those present.]

The Colorado Fuel and Iron Company has coal and iron mines and lime quarries located in Colorado, Wyoming, New Mexico, Utah and California, some over five hundred feet above sea level, others ten thousand feet. These camps employ from fifty to five or six hundred men each when in full operation.

The company also has a steel works at Pueblo, Colorado, where it employs from 3,500 to 5,000 men. Forty-two or more dialects are spoken.

Welfare work is carried on in some form or another whenever the company plants are in operation.

STEEL WORKS DISPENSARY.

At the entrance of the steel works, in the yard with the general offices, is located the dispensary. It has a staff of four regular physicians—no interns. There is in attendance always one or more of the doctors. Here is kept a complete assortment of drugs and medicines and surgical supplies for emergencies. 62,881 cases were treated at the dispensary last year.

MINNEQUA HOSPITAL.

The location of Minnequa Hospital of the Colorado Fuel and Iron Company at Pueblo is ideal. The grounds occupy an eminence on a broad mesa overlooking beautiful Lake Minnequa. To the west forty miles are the Cuerno Verde and the Sangre de Cristo mountain ranges; fifty miles to the north, Pike's Peak, and seventy-five miles to the south, the Spanish Peaks.

The architecture is known as Spanish Mission; the construction is of brick and cement; the roof, red tile. The absence of verandas is noteworthy. A wide veranda obstructs light and air, and is unsanitary. Ill persons are annoyed by the congregating of people on the outside.

The gate at the south entrance to the hospital grounds is of cement construction, Spanish Mission style, harmonizing with the hospital structure. At the west entrance there is another Mission gate, of wood construction. A walk leads from the south gate to the hospital, on each side of which is a row of flowering hedge.

Just inside the grounds is the recreation hall. It is supplied with smoking and reading rooms, furnished with rustic chairs, tables and book cases, and a fireplace. Here the convalescent enjoy many hours, playing games, reading and visiting friends.

The rustic bridge, which crosses a beautiful grassy lake, is one of the most artistic spots on the grounds. The twenty-acre lawn with an abundance of shade may be called a general ward for the convalescents. Fresh air is administered freely and most gratefully do the patients respond to Nature's remedy.

Every patient is kept out of doors as much as possible. There are open-air tents for those suffering from pulmonary troubles, and a pavilion for contagious cases.

The entrance to the hospital is approached by an inclined driveway rising a half-story, covered by a porte-cochere. A patient may be taken from the ambulance on a wheel stretcher and rolled to any part of the building without being jarred or shaken, as inclines are used in place of stairs and elevators, through the hospital. Stairs make it hard for both patients and attendants, and the elevator is often out of order or the operator not at hand. Inclines do away with all these objections, to say nothing of the comfort to the patients and convenience to attendants. They make it almost as easy to go from one story to the next as to walk on the level floor.

Entering the front door, one is attracted to a beautifully decorated corridor. Bright flowers and plants on rustic stands relieve the eye, and the baskets and boxes of flowers over the doors shed an atmosphere of cheerfulness not found in most hospitals. Over the archway of this corridor is a painting—"The Allegory of Silence" —done by Professor Ernesti.

One is impressed with the plainness and simplicity of the architecture. It is perfectly simple, but attractive; doors are pannelless and transomless; there is not a shade at any window, but instead the washable "Minnequa Curtain," noiseless in the wind, part or all easily removed, and so arranged that much, little or no light may be admitted.

The capacity of the hospital is 216 beds. Every room is an outside room.

Showers and rubbing slabs take the place of bath tubs. A very important feature is the arrangement of the plumbing, which has been placed far enough from the wall to admit of its being easily got at from all sides. There is no boxing-in, but everything may be reached by the housemaid and thoroughly cleaned.

All corners are rounded, above, below and at the sides, hence all surfaces are easily cleaned, and dust does not readily accumulate.

The floors are laid with a cork carpet, which is noiseless, not cold, and soft to the feet. It is a rare exception for a nurse to complain of discomfort to her feet.

All rooms are decorated with pictures in black and white, and paintings. The pictures in each room form a group illustrating a country or theme; for instance, an English, a Dutch, a Japanese, a Spanish or Indian room. No two rooms are draped alike, but each is made to harmonize with its pictures. The reason for this idea is to relieve the patient when tired of his surroundings by changing him to another room with entirely different surroundings. The pictures are hung low so that they may readily be removed and cleaned.

Artificial flowers, which today are made so perfectly that they are commonly mistaken for the natural, are used extensively in the rooms and corridors. The artificial flower has the advantage of long life. A dying plant is suggestive to a sensitive and seriously ill patient. In the sick room often not enough attention is given to little things such as this.

Each floor has a linen apartment. In the center of each room stands a stack of shelves with a round top, away from the wall so that it may be approached from all sides and easily cleaned. In place of bureaus or chiffoniers a chest of shelves and hooks is used, opening on both sides, so that they can be cleaned through and through.

The Indian sun parlor is especially artistic, with the Indian bowls, Navajo rugs, and decorations of brilliant foliage, and is much used during inclement weather. It leads to the nursery, which is complete in every detail.

The operating room is a decided innovation, as it is lined throughout with sheet lead. On the floor the lead weighs twelve pounds to the square foot, and on the sides and ceiling, six pounds. The ceiling slopes to carry any condensation of moisture to the sides. The room is sterilized with live steam. It is heated by the indirect system. Screened air is forced into the room and the air from the room is exhausted by electric fans. Light is admitted from but one side, the north, thus preventing cross lights. The walls are dark, absorbing light, which is a relief to the operator.

Lead is waterproof, nonabsorbent and crackless, thus affording no lodging places for germs and admitting of thorough cleaning. It is airtight and waterproof, not easily damaged, and if punctured is readily repaired; it expands and contracts without fracture, is noiseless, not slippery and does not reflect light. What more can one ask?

The room in which anesthetics are administered is painted green and decorated with pictures and frames in sepia and other browns—colors which psychologists say are least irritating to the brain.

There are both x-ray and pathological laboratories. The former has a Sheidel-Western interrupterless x-ray coil, with all accessories for doing the fastest and most deep-seated work. Extensive use is made of both these departments.

Minnequa Hospital has a nurses' training school. During the junior year they study anatomy, nursing, materia medica, bacteriology and medicine. The second or intermediate year they are taught anatomy, nursing, bacteriology, dietetics, materia medica, bandaging, nursing ethics and medicine. The senior year embraces the study of clinics, anatomy, obstetrics, bandaging, surgical technic and materia medica, and lectures on hygiene, gynecology, eye, ear, nose, throat, etc.

The Minnequa Hospital farm, about seven miles from Pueblo, has a herd of forty-eight selected cows and 700 chickens. It furnishes the hospital with milk, cream, poultry and eggs.

[Following the description of the hospital, an outline of the welfare work was presented. The following list gives an idea of what is being done and what is contemplated.]

Welfare is essential to the company's interest and is not a philanthropic, but a business policy.

- Preventive
  - Direct
  - Indirect
- Curative
  - Medical
  - Surgical
- Direct
  - First Aid
  - Safety First
  - Examination
  - Vaccination
  - Sanitation
  - Education
- Indirect
  - House and Home Surroundings
  - School
  - Church
  - Night School
  - Lectures
  - Bulletins
  - Social Clubs
  - Parents' Meetings
  - Boy Scouts
  - Camp Fire Girls
  - Nurse
- First Aid
  - Draeger Helmets
  - Pulmotors
  - Self-Rescue Outfits
  - Rescue Cars
  - Stretchers
  - Ambulance
  - Drill Corps
- Safety First
  - Fool-Proof Protection
  - Signs—Printed
  - Signs—Electric
  - Danger Signals
  - Notices—Different Languages
  - Photos
  - Displays
  - Literature
  - Rules—Enforced
  - Inspectors
  - Reporting of Dangerous Places
  - Fire Protection
  - Goggles
  - Shoes—Special
  - Lock

EXAMINATION	Physical Mental Moral	Compulsory on admission
(Re-examination periodically.)		
IMMUNIZATION	Small Pox—Compulsory Typhoid—If desired	
IMMUNIZATION	Diphtheria Tetanus Rabies	When needed
SANITATION	Ventilation Light Heat Drinking Water Wash Rooms Paper Towels Lockers Toilets Urinals—Convenient Corps of Cleaners Rubbish Cans Fumigation Painting Camp Cleaners Reports	
EDUCATION of management, superintendents, bosses	Importance of Welfare Work	
EDUCATION of employees	Interpreter Safety First Aid Lectures Moving Pictures Health Bulletins Posters Nurse Personal Contact General Bulletins	
HOUSE AND HOME SURROUNDINGS	Sanitation Finance Expenses Food Physical Condition Mental Condition Vice Social Relations Civic Relations Education District Nurse Recreation	
MEDICAL & SURGICAL DEPARTMENTS	Minnequa Hospital—Pueblo Steel Works Dispensary Camp Dispensaries	

DISCUSSION.

Chairman: Dr. Corwin has some pamphlets which he wishes to speak about.

Dr. Corwin: I only wanted to say that perhaps some of you who were interested in work of the sort might be glad to look over these little folders which we put out every month for the education of our people. I might also speak of one thing that is brought out in them: that is, in regard to quiet in the care of our patients. We do not allow our nurses to laugh out loud, we keep them quiet in the hospital, we do not permit swishing skirts. The doctors are also obliged to be quiet; if they are not, we do not want them.

Chairman: It is getting late and perhaps we had better postpone the question box to the morning session.

Adjournment.

THE CARE OF CASES OF MENTAL DISEASE IN GENERAL HOSPITALS.

By Henry M. Hurd, M.D.,
Secretary, The Johns Hopkins Hospital, Baltimore, Md.

(Read by Dr. Seem.)

When Benjamin Franklin wrote the petition to the General Assembly of Pennsylvania which was the first step in the establishment of the Pennsylvania Hospital in 1751, he based his plea largely upon the need of providing accommodations for the insane in this hospital no less than for the friendless and homeless sick.

For many years thereafter provision was made for the insane by the Pennsylvania Hospital in the building on Pine Street, and in fact it was not until 1840 that the department for the insane was established as a separate institution in West Philadelphia.

The same course was pursued in the New York Hospital established in 1791. The insane there were at first housed in the same building, later in a building especially erected adjacent to the hospital, and it was not until 1822 that a separate institution was erected at Bloomingdale for the sole treatment of the insane.

In Boston in 1818 similar provision was planned and was only prevented from being carried into execution by the liberality of John McLean who gave funds for a separate institution. I mention these little scraps of history to show that the care of the insane in the wards of general hospitals is no new thing.

The question very naturally occurs, "Why was this original plan given up?" The answer is very simple. In these early days the nature of insanity was imperfectly known and appreciated, and "insanity of conduct" was about the only form recognized, and the presence of excitement was largely the diagnostic sign of it. The active, demonstrative and irrepressible victim of excitement was alone considered to be insane. When he became quiet, even if he remained depressed and obviously impaired, he was regarded cured. There was no longer any room for him in a hospital, as his need of care was not urgent, and he was accordingly discharged. Under the circumstances it often became necessary to provide for his care in an almshouse or a private family or even in a strong room at his own home, if he remained irresponsible and incapable of earning his own living. Hospital care of the insane was at that time on the same footing as hospital care of the helpless and friendless sick. It was designed to meet emergencies only and could never be regarded as a permanent provision for them. Insane persons who did not recover or who if quiet and self-controlled were not able to resume their places in the world as self-supporting citizens could not remain in general hospitals indefinitely, because there were too many of them and hospitals were not arranged for their continued care; consequently separate provision was made for them.

It is now evident, however, that the exclusion of all insane persons from general hospitals has been a disadvantage to the hospital and to the insane and has tended to place too much emphasis upon the legal aspects of insanity, and to obscure the view that insanity is a disease which ought to be treated promptly under the same conditions as other bodily diseases. This does not imply that many cases sooner or later do not require a legal commitment to an institution especially arranged for them.

Many unfortunately cannot remain in a general hospital indefinitely because of the chronic character of their disease and the advantage often of a change of scene at one stage of recovery, but many more persons can be successfully treated in general hospitals,—upwards of 50% at least according to the experience of the Albany Hospital—and will not need to go to a special hospital or require the formality of a legal commitment.

It is proper to state here that originally in many states the legal aspects of mental disease were not so prominently in public view and patients at first were generally admitted to institutions without any legal formalities beyond certificates of insanity from one or two physicians. About forty years ago, however, largely through the pernicious activity of an uncured insane woman, so-called personal liberty bills were enacted in many states which prevented all restraint of the liberty of an insane person without a prior decision as to insanity and an order of a court. In Illinois in fact for many years the victim of mental disease was arrested and taken into court upon the charge of insanity, a jury was impanelled, attorneys were assigned for prosecution and defense and all the legal formalities of a trial were ended only by a verdict of "guilty of insanity" or "not guilty of insanity." This tended to prevent the early treatment of insanity by hopelessly complicating the diagnosis of a bodily disease with a question of law as to the propriety of custody for the purposes of treatment. As a result the existence of mental disease was felt to be in a degree a crime and treatment was not sought until the manifestations of it were so plain that even a jury could not mistake them.

The need of prompt care for such patients finally compelled the organization of detention hospitals in New York, Chicago, Philadelphia, Washington and other cities. The detention wards attached to Bellevue Hospital in New York may be regarded as one of the best examples of such places of detention. They furnish custody and give an opportunity to determine the need of commitment but do not give hospital treatment. If such persons are not violent enough to be deprived of liberty they cannot be detained. Hence they have had a limited usefulness as places of treatment and cannot be considered true hospitals.

A better arrangement has obtained at the Albany Hospital in what is known as Pavilion F. This consists of two wards of a large general hospital—one for each sex—arranged for the prompt treatment of mental cases without the formality of any legal proceedings at the outbreak of mental disease whenever the condition requires removal from home. These wards have been placed under the care of a skilled psychiatrist of large experience who has had a continuous service for upwards of twelve years. During this period, as is seen by the last report, 3,133 patients have been treated, of which number 1,670 or 53% have been able to return to their homes without being sent to a special institution for mental diseases. The success of this Pavilion is largely due to the skill of the attending physician and the confidence which its work has inspired in the community, so that patients have been admitted each year in largely increasing numbers.

There has also grown up in a few instances what have been termed psychopathic hospitals, modelled largely after those of Germany. The first of these was established by the State of Michigan at Ann Arbor in connection with the hospital belonging to the State University. It was at first designed for the speedy treatment of cases of acute mental disease, but eventually it was very wisely brought into relations with the state hospitals for the insane and has been able to co-operate with them in furnishing the clinical diagnostic tests now required in pathological work, and in the study of special forms of disease. The psychopathic hospital however constitutes a department of the general hospital and serves for the care and study of acute mental conditions.

In Massachusetts a psychopathic hospital has been established in Boston as a branch of the Boston State Hospital and furnishes facilities for the study and treatment of incipient and urgent cases of insanity, but it is not connected with a general hospital although general hospital methods are employed and the nursing and staff organization are similar.

In Baltimore the Henry Phipps Psychiatric Institute has been established as a department of the Johns Hopkins Hospital in close proximility to its wards. The medical organization is similar although separate because of the special training of its medical officers, and its nursing is done by the pupils and graduates of the training school for nurses connected with the hospital. Its relations to the hospital are much the same as those of Pavilion F of the Albany Hospital.

In such psychopathic hospitals attached to general hospitals the obvious advantages are the greater activity of the medical service and the stimulating effect of an association with a general hospital. Both physicians and nurses are filled with the spirit of the hospital, which stands for constant effort for the cure of patients. General hospital nurses and physicians in their turn feel the mighty influence of a department which gives itself without reserve to the sympathetic care of those who are suffering in mind as well as body and who need the highest devotion of both physicians and nurses.

The disadvantages of such association should not be forgotten. The proximity of noisy or excited persons is often a source of annoyance or injury to persons in the adjacent wards, who may be extremely ill or nervous. Many mental cases also soon feel the need of more abundant open-air exercise, such as is only practicable in an institution located in the country. Hence such a hospital ward must be regarded as an emergency provision for acute forms of mental trouble and cannot be expected to meet the wants of every form of disease for an indefinite time. It affords an opportunity to study the disease thoroughly and frequently permits the patient to return to his home restored to health without being subjected to a legal commitment to an institution. It is especially adapted to the especial care of the various forms of delirium due to alcoholics or drugs or to the toxic effects of fatigue or exhaustion or to the toxæmia of Bright's Disease or acute febrile conditions.

If a general hospital is engaged in the education of medical men and nurses there are additional reasons why it is desirable that opportunities be afforded to these two classes of students to become familiar on the one hand with the recognition of forms of mental disorder and the best hospital methods of care, and on the other with nursing. These can be better learned by actual contact with such patients in general hospitals than by clinics or occasional visits to special hospitals, or by didactic lectures.

It is further important that the study of the phenomena of mental disease should be made obligatory upon medical students and nurses. Such disorders are encountered daily in the routine of general medical practice or of nursing. How few there are who are able to discriminate between a toxic delirium due to an infection, a fever, a poisoning by iodoform or some apparently harmless remedy used in medicine or surgery, etc., and a well-developed form of mental disease requiring close custody and watchful care! And yet the future of the patient may be permanently affected for weal or woe by the prompt recognition of the condition.

The nursing care of mental diseases can never be adequately accomplished until it is placed in the hands of educated women who are trained for it and are familiar with general nursing, but who need an insight into the higher privileges of the nurse which are only acquired by actual contact with mental cases. As Miss Taylor has recently said:*

"The conclusion obviously to be drawn is that the woman is the important thing—one fitted by her natural inheritance and by her education—and the woman who is the most successful in this work is the one who has complete possession of herself; one who understands and appreciates human nature; one who has a keen sense of her relationship to others, who has judgment, patience, observation and tact; who knows the great advantage of silence, but at the same time knows when to speak; the woman who has had the broadest culture acquired by reading or travel, who has added to her general education many accomplishments, thus making her interesting, versatile and resourceful—such a woman we crave for our mentally ill patients. When more of the type above described are in our mental hospitals (and for that matter in our general hospitals as well) we may look for astounding results, even though the doctors are still debating over whether or not in dementia præcox there is a pathological change in the brain cell or whether psycho-analysis is the proper method of treatment to employ in functional neuroses. The nurse, properly equipped herself, who co-operates with the physician and enters into the life of her patient, can do more than any one else to establish proper habits of thought. It is she who spends hours with the depressed patient, or the one whose mind is filled with the sordid things of life. If she can substitute from her own experience something else to take the place, if she has patience to plod on and courage to believe, as Dr. Osler says, that life is a habit—a succession of actions that become more or less automatic—that one trial after another, one failure after another, gives power, she will not become discouraged, though the process seems slow, but eventually will accomplish wonderful things. And not alone does the ideal nurse need physical and mental power, but she needs moral and spiritual power as well, for there is no kind of work, no association with humanity that brings one more in contact with the grosser side of life than does mental work. Thus it is she needs the uplifting support which comes alone through contact with the moral and spiritual influence."

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*Johns Hopkins Hospital Nurses Alumnae Magazine, October, 1914.

Nothing could more clearly represent the advantage of the attitude of mind which the educated woman nurse brings to the discharge of her duties when placed in charge of mental disorders. She looks upon nursing from the standpoint of the relief of bodily disease and has little or no sympathy with the old-time attitude which so long characterized those who had charge of mental cases, derived largely from the traditional belief that their condition was due to demoniacal possession and was to be relieved not by kindness and sympathetic care and good nursing, but by seclusion, confinement and constant repression. While therefore, the educated woman nurse is needed for the care of mental disorders it must not be forgotten that she equally needs the experience which such care brings to her. The tendency of the nursing of bodily disorders is towards routine and uniformity. This is especially true of surgical nursing. Much of the work of a nurse is an exact science and appeals to the head more than to the heart and there is always danger that her attitude towards her profession will become cold and impersonal. The nurse sometimes becomes a stickler for hours of duty and daily life according to a formula and does not develop an active sympathy for her patients and a personal interest in their sufferings. The nursing of mental cases changes all this. The patient is no longer a mere case of some interesting form of bodily disease but a suffering human being who may be led from the darkness of gloom or of mental irresponsibility into the light of reason and clearness of mental vision by the personal work of the sympathetic, enlightened and unselfish nurse. The "vision splendid" once given to her can never be forgotten and will have a life long influence.

To descend to a lower level there may be added as a reason for utilizing wards in general hospitals for the treatment of mental cases the manifest economy to the state. It has been found in the experience of Pavilion F at the Albany Hospital that at least fifty per cent. of the patients admitted do not need to go to any other institution, but are able to return home restored to health or so far improved that a subsequent convalescence is assured. The future of the patient is secured, and the legal, commercial and social evils which threaten an individual who has been committed to an institution for the insane are avoided. Such prompt care and successful treatment of several hundred mental cases each year give relief at a time when the mental disorder generally presses most severely upon the family, and hope is not extinguished as it so often is when a patient is legally committed to a State Hospital.

It is evident that the crux of the situation in such cases is prompt and enlightened treatment. This should be secured without legal formalities precisely as admission is secured to any general hospital. If patients require to be committed legally, they should be sent to State Hospitals where legal authority exists for their detention. As long as patients are willing to remain informally and can do so with safety to themselves or their associates, they should be given an opportunity to receive hospital treatment. If they are violent, turbulent, homicidal or suicidal they should go elsewhere. If patients, however, are admitted early without legal formalities the danger of the development of these unpleasant characteristics is much diminished. The use of general hospitals for the prompt and efficient treatment of mental cases is in the writer's opinion of the utmost importance in every city large enough to supply sufficient patients to enable the hospital authorities to do systematic and efficient work. It is useless to attempt to use a general hospital for mental cases unless proper medical and nursing care can be assured in wards especially equipped for them.

RATING PROFESSIONAL MEN FOR HOSPITAL APPOINTMENTS, FOR PROMOTION, AND FOR HOSPITAL REPORTS.

By Robert L. Dickinson, F.A.C.S.,
Brooklyn, New York.

To state the terms of a problem is to advance a good stride toward solution, even though one may have little actual experience to report and has to confess to some reiteration. There are but two thinkable attitudes toward marking and comparing the qualifications and efficiency of professional men. Either one may contend that it is not feasible to lay a yard stick to common sense or set a guage on judgment; or else one may divide the work to be done by the physicians and surgeons into its component parts and study results, and then seek to analyze the characters and traits needed to effect these results. The old point of view that regarded medicine as something mystic, intuitive, a bit astrologic, we need not discuss amongst you practical people. You know, as the public does not, that there is no hospital governing board, which, when a vacancy occurs or the day for annual re-appointment comes/ around can ask for the equivalent of a base ball fielding average, or race-track record, or government office rating as applied to visiting surgeon, house surgeon, or nurse. A consensus of opinion made up of general impressions, or personal preference and prejudice decides. No record of efficiency exists. Seniority, friendship, and many unavowable under-motives actuate a choice or a promotion. The time has surely come to catch up with the Civil Service, with the Army and the Navy and many corporations. From them I have asked for counsel and from their experience I have ventured to make a start by submitting a schedule on which doctors may be marked. I had studied the matter for years. It had to crystallize when the Commissioner of Public Charities of a great city said to the governing board of doctors of a new municipal hospital: "I ask you to lay on my desk, every six months, a report specifying the work done by each department and each doctor, a report, not just figures or technicalities, but clear and direct so that any layman can get it and we can see who is making good and where the weak spots lie." We are perfectly well aware that hospital trustees know next to nothing of the comparative merits or details of the work of more than a few men, and are in a haze when it comes to promotion or change. We know that one department sees little of the work of other departments. The superintendent knows most—indeed he is the only one who has a chance for any perspective. Even he, I believe, would welcome some not too complex scheme of record of performance. "Provided that the trouble and expense of obtaining and maintaining such efficiency ratings did not exceed the value of the record in increasing the effectiveness of the service." Happily, most happily, our best authority on the subject, Griefenhagen, assures us that the Civil Service experience and departmental work has shown that of the several methods of marking employees "a system which is **50% accurate will probably have about 90% of the practical value of a system that is absolutely accurate."** He favors marking according to a **relative standard,** the actual performance measured against an arbitrary standard performance. The value of this standard performance is derived by assuming that the services of the ideal employees are, say, twenty-five per cent. better than the services of the average employee in the same grade. According to this system employees whose work is not better nor worse than the average of the same grade, receive a marking of say 80 per cent., all those marked under 80 are those whose work is below the average and those marked above 80 are those whose work is above the average. This scheme prevents markings crowding up to the maximum and insures a relative indication.

"The **considerations** entering into the efficiency of an individual in any position **are many and complex**—they must take account not only of the employee's actual individual output and performance, but of the effect of his work, activities and conduct on the efficiency of the whole organization of which he is part. Where any system for determining efficiency other than that of simple judgment markings is adopted it is impractical and impossible to rate the service in its entirety. The result may be accomplished, however, by considering the various factors in the service, which factors should take account of all the features and aspects of the employment weighted according to their relative importance. Each factor may then be considered independently and the efficiency of the employee in regard thereto may be rated, all other features of his services being disregarded.

"In general, the board in charge should outline a form of record upon which original data serving as the basis for efficiency ratings shall be permanently recorded. . . . The information forwarded in the efficiency report might well include the markings in each factor together with the details relating to punctuality, attendance, and discipline which are matters of fact and have a value independent of their bearing upon the general rating of efficiency. The entry to be made on official records . . . should be as simple as possible. It is most desirable that it be reduced to a single percentage figure.

"The processes involved in the preparation and **keeping of efficiency records** have many desirable effects in indirectly **increasing the efficiency** of the service. The process of standardizing and classifying duties and uniformity of grades is essential as a preliminary step in outlining a schedule for the rating of individual efficiency. . . . The process of standardization, and the determination of the superior officer who shall furnish the data upon which markings are to be based invariably bring the internal organization of each department to light, make it necessary to define clearly the responsibility of each superior officer, establish definitely the lines of authority, eliminate conflicts, indicate defects in the scheme of organization and often make the remedy obvious. **A record of conduct and attitude of employees must indicate conformity with regulations and this naturally necessitates the preparation of such regulations, which in itself is a desirable thing."** The rest of this thoughtful paper by a leading Chicago official should be read in all those parts bearing on our work. I have quoted from it more fully elsewhere in considering instruction in duties and systematic inspection inside the hospital. Meanwhile, I submit a tentative schedule that errs on the side of over-fullness because it is easier to substract from it than to add to it.

SUGGESTED FORM OF REPORT ON EFFICIENCY OF EACH MEMBER OF PROFESSIONAL STAFF (Dickinson)

Name
Position held Average number of beds
(Salary Residence in hospital Method of appointment)

A. *Quantity of work*; months on duty; total visits required; total visits made; total hours given to hospital (or dispensary); vacation; illness, absences, excused, unexcused.
Estimated committee service.

B. *Quality of work*; (thoroughness, promptness, rapidity).
1. Preliminary examinations, consultations.
2. After-care, examinations for discharge, instructions to follow on.
3. Histories, personal inspection, personal notes, reviews, studies on end-results.
4. Laboratory work, supervision, personal work.
5. Training of hospital staff, nurses, dispensary staff.
6. End-results (Codman method): The end-result cards, easily grouped for each individual, records successes and errors,—the errors scored as
a—lack of technical skill
b—lack of judgment
c—lack of care or equipment
d—lack of diagnostic skill.

Failures grouped also by
a—patient's enfeebled condition
b—patient's unconquerable disease
c—patient's refusal of treatment
d—surgical or medical calamities.

Methods; comments on full histories by Chief; review by Consultant or Efficiency Committee; summary of history by clerk; choice by staff of certain operations as tests (e. g. suppuration in clean laparotomies).

C. *Personality*: integrity; disinterestedness; obedience to rules; team-play; kindness; cheerfulness; enthusiasm; and ability to inspire these.

D. *Progressiveness*; study of literature; travel to other clinics; membership and attendance at medical societies; originality; researches; publications.

E. *Executive ability;* initiative; organizing power; control.

F. *Teaching;* staff, nurses, dispensary; students; public clinics.

G. *Inspections*; number, by Trustees, Consultants, Hospital Inspector.

Certain defects to be heavily scored—such as lack of judgment.

Percentage to be given under each heading to be determined. Positions differ. Some positions will have a score for executive work, and some for teaching and others will not. This will involve grouping and reporting such positions separately, but any man's abilities in any of the above matters should be noted even if not marked on a score.

It will be noted that a considerable section of the schedule is given to the details of the Codman plan.

This, the Massachusetts General system, laying all the emphasis on end-results, constitutes, without doubt, our most important guage and must be accorded a large percentage in the scale. A few lines on the patient's index card and a clerk to follow up are the reasonable requirements. But they are not the whole thing. Other factors have to be taken into account in measuring a man whenever he works as one of a group. On this matter of the relative weight to be given to the varying factors we need much study and not a little experimentation in a spirit of frankness and subordination of the individual and his pet weaknesses to the big work in hand. This short paper is a plea for such study.

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FRIDAY, JUNE 25—MORNING SESSION.

Called to order at 9:30 A. M., by Acting-President Summersgill.

Acting-President: I have a letter from the Cadillac Motor Company, which I will ask the Secretary to read.

The Secretary read letter from Cadillac Motor Co., inviting the members of the Association to examine their ambulance at the emergency hospital on the Exposition grounds.

Acting-President: I telephoned them that we were to leave at about eleven o'clock and that if they wished any of the members to see that ambulance to have it here before that time. We will also try to have our pictures taken. The photographer who will take them is an official photographer of the Exposition. The report of the Treasurer will come next.

TREASURER'S REPORT FOR THE YEAR END-JUNE 11, 1915.

Receipts.

Membership and dues	$4,211.50
Annual Transactions and list of names	19.45
San Francisco meeting directory, per Dr. Summersgill	90.00
Cash balance Aug. 22, 1914	887.64
	$5,208.59

Disbursements.

Clerical services	$ 590.00
Postage	472.14
Printing	1,514.27
Exchange on checks	18.35
St. Paul convention	490.10
Expense of committees	194.60
Non-commercial exhibit	214.82
Telegrams	11.93
Sundries	2.30
Cash balance June 11, 1915	1,700.08
	$5,208.59

Asa S. Bacon, Treasurer.

Acting-President: You have heard the report of the Treasurer. What is your pleasure?

Dr. Walsh: Have the Treasurer's accounts been audited by the Auditing Committee?

Acting-President: The Chairman of that Committee is on the way now. I presume it would be advisable to wait before acting on the report until the Auditing Committee has reported. The next Committee to report is that of the "Committee to Study the Character, Cost and Value of Direct and Indirect Work for the Prevention of Diseases now Conducted by Hospitals and Dispensaries, to Arrange in the Order of their Importance and Practicability Successive Steps for the Extension of Such Work and to Prepare Methods of its Financial Support and for its Correlation with the Similar Work of Other Agencies, Public and Private." Dr. Hornsby reports progress on this, but states that he has no report to make concerning it at this meeting. Therefore, we will proceed to the next one, which is the report of the Committee on Time and Place of the Eighteenth Convention. Will the Chairman of that Committee please make its report? This Committee is in session outside and is not able to make its report at this time. Therefore, we will proceed to receive the report of the Nominating Committee. While we are waiting for this Committee to report, I will call on Dr. Burlingham to read the resolutions that that Committee has adopted concerning our late President.

Dr. Burlingham: Dr. William Orris Mann, born at Randolph, Massachusetts, 1869, died at the Massachusetts Homeopathic Hospital, April 9, 1915.

Dr. Mann received his early education at the Thayer Academy, and in 1892 was graduated by the Boston University School of Medicine. After graduation, he served his interneship at the Massachusetts Homeopathic Hospital. He was Assistant Physician for two years at the Westboro, Massachusetts, State Hospital for the Insane, and subsequently became Assistant Superintendent of the Fergus Falls, Minnesota, State Hospital for the Insane.

Since 1899, when he was elected Superintendent of the Massachusetts Homeopathic Hospital, he has been the executive officer in charge of that Hospital, and the growth, the improvement, and the reputation of that institution are largely due to his efforts.

Dr. Mann was an earnest, progressive and faithful executive officer and was tireless in carrying out the multitudinous details connected with the work of his position.

To the hospital field, his loss will be great and lasting—to this Association, his death has meant much—to those who knew him as a faithful; loyal friend, his place can never be filled.

Resolved, that this memorial be spread on the records of the Association, and that a copy be sent to the family and to the Massachusetts Homeopathic Hospital.

Acting-President: I believe it would be a very good idea to have the approval of the Association of these resolutions. Will some one please make a motion that they be adopted?

Mr. Davis: I move they be adopted.

Seconded. Carried.

Acting-President: I feel that the affairs of the Association—although I have not attended any conventions for two years—from the general atmosphere and conversation I have heard, are not in the very best condition, and I feel that the next two years will be a very critical time in the history of this organization. I feel that we should have those whom we can support for officers of this Association, that they should be men of the very highest type, men who have made records for themselves in their work and have done good work for this organization, and that when such officers are elected every one will stand back of them, whoever they are, and will work for the success of the organization next year and succeeding years. We have all sorts of troubles in our institutions at home, and I think that when we come out to these conventions we should leave most of those troubles at home and all get together and work together to make our conventions successful. Have any of the members any unfinished business or suggestions or anything of interest to say while we are waiting for these Committees to report? If not, I will declare a recess until these Committees are ready.

Acting-President: The meeting is called to order. Is the Committee on Time and Place ready to report?

Dr. Warner: The Committee on Time and Place has held rather an extended session this morning, and we apologize for the delay which we have caused. The occasion for this delay is the feeling that it was a rather more important decision that we must make than is usually placed on such Committee. The situation in the Association seemed to us rather critical. This has been the smallest meeting in our memory. It is the farthest from the bulk of the hospitals and there are so many attractions about this country that our meetings have been the smallest in some time, at least. It seemed to us, first, that we must go where we would be within reach of a larger number of the hospitals. Forty-seven and a fractional per cent. of the hospitals of the United States are in the New England states, New York and Pennsylvania, and 67 and a fractional per cent. of the hospital beds of the United States are in those same states, New England, New York and Pennsylvania. This seemed to us to indicate that an eastern meeting would probably get back to us our old crowds. It seemed, too, that perhaps an eastern meeting, where there is not so much of interest and of beauty to see, would give us back our more regular attendance at the meeting, and for those reasons we selected Philadelphia.

There has been so much pleasure, and I fully believe so much profit, in the special trains of the last two years, enabling everybody to get acquainted, and I think all of us who have been on the trains have enjoyed it so much, that we want to make a suggestion to the arrangement committee—this is not a report, only a suggestion—that if the meeting were held in Philadelphia a special train could be run from Chicago, over whatever road worked out best to pick up the largest number, arrange to land in Washington some morning, to give everybody a day in Washington, then go on to Philadelphia, hold the meeting in Philadelphia, but arrange in the middle of the meeting or at some time during the meeting for a run to Baltimore, which is only two hours distant from Philadelphia, and have a chance to see the things of interest at Johns Hopkins University. Philadelphia is near enough to Atlantic City and New York so that if any large number desired special trips there, it could be done. This arrangement seemed to us the one which would give us the largest attendance and we asked the Nominating Committee to tell us in confidence beforehand what their report was to be and that has been duly considered, and we therefore report—what I said has not been the report—that we recommend that the meeting be held in Philadelphia next year. (Applause).

Dr. Baldwin: I move the adoption of the report, and would ask the Committee if they have considered the time. I understand this is a Committee on Time and Place.

Dr. Warner: The Committee discussed time but little. There was only one point brought out as to the time, and that was that it might be most interesting to arrange the time so that we would see Congress in session. Not being sure of dates, the matter was dropped. I did not understand that it was necessary for us to fix the exact date at this time, that the new Committee on Arrangements might be able to fix the exact dates a little more intelligently later than we could do now.

Dr. Baldwin: I move the adoption of this report.

Seconded. Unaminously carried.

Dr. Walsh: In view of the fact that the Association has unanimously adopted this report, it becomes my great pleasure to tell you that there have been, as almost every one knows, numerous invitations extended by civic bodies and by the Mayor himself to this Association, and I feel that it will be entirely possible for Philadelphia to conduct a meeting quite along the lines laid down by the Committee. I feel that the Association will not regret coming to Philadelphia. (Applause.)

Acting-President: I trust that every one will do everything they can to make a success of that meeting. The next report is the report of the Committee on Nominations.

Dr. Hornsby: I should like more than anything not to have to make a report on this. I doubt the wisdom in the abstract of nominating committees acting when all the members are not present. I find that it is an unbroken precedent in the Association that nominating committees have acted, although at times there has not been a single member of the committee present, and the nomination is made to the President presiding, by mail. Last year, there was only one member present. I asked Dr. Mann just before his death if he would not make an appointment of another committee. We already knew that Dr. Ancker and Dr. Babcock would not be with us. Dr. Mann declined to do so and even declined to release Dr. Babcock, who at that time we knew would not be here, and insisted that the committee do its work. More recently, I proposed that the Acting-President of the Association be asked to appoint a new committee. That was objected to by my fellow members on the committee, and they thought that it would be a precedent that was not a wise one, of appointing a new Nominating Committee just preceding the meeting. So that, whatever my own inclinations are, it seems that I am not permitted to follow my pleasure in the matter and avoid the almost, I might say, individual nominating of the officers for the coming year.

As to the officers themselves, you know and I know that our going west last year to St. Paul and our coming out here has, at least temporarily, removed from us quite a considerable number of people. We thought that we could get new people and that the old people would come back. I think that will be true, but I think it will be true only in the event that we make very wise nominations for our officers now. The Association if it ever needed strong guidance, does so now, if it ever needed tried people, people who have followed the fortunes of the Association, it does now. Do not let us please ourselves with the notion that we are a fine Association. We are not. There are 7,000 hospitals in this country; there are 100,000 trustees of hospitals in this country; there are more than 100,000 members of medical staffs in this country; and there are more than a million contributors to hospital funds; yet we have 1,200 members in this Association, people, presumably, who are interested in hospital activities, willing enough, interested sufficiently to pay $5.00 for membership in the only Association that stands for those interests. That is not enough. We ought to have 25,000 members. We have had 1,200 members, or approximately so, for five years, six years, about a thousand six years ago; and while we get two or three hundred new members, we lose two or three hundred old members, so that we are not growing properly. We need some new ideas, some new stimulus, some new impetus, if you will, and I have been thinking very seriously about that. The Nominating Committee has been in conference. We cannot get a unanimous choice, and so I am going to submit the Committee's report, made out by Dr. Babcock and myself, after months of consideration, before I left home.

I want to name as the sense of the Nominating Committee, for President, Dr. Winford H. Smith, of The Johns Hopkins Hospital, Baltimore; for First Vice-President, Dr. Charles D. Wilkins, of the Charity Hospital, New Orleans, Louisiana; for Second Vice-President, Miss Nettie B. Jordan, Superintendent of the Aurora General Hospital, of Aurora, Illinois; for Third Vice-President, Dr. Andrew R. Warner, of Lakeside Hospital, Cleveland; for Treasurer, Mr. Asa S. Bacon, of Chicago; for Secretary, and I must speak again here—the secretaryship, I hope I am not giving offense, but the secretaryship for the last two terms, I think, has not been just all that it should be. I think the Secretary's job is one of work and I do not believe that very many of those who are actually superintendents of hospitals have the time to give to the work. We are busy people when we have got a hospital, and I am thinking just at this moment of some one to whom, if we had any sort of success at our meeting in St. Paul, the credit was due, some one who is responsible for a lot of the good that was done here. I refer to Miss Keller. (Applause.) This Association needs clean, clear thinking and some work, with the help of a strong President and an Executive Committee and a faithful and loyal and self-sacrificing Secretary. If there is anybody connected with this Association directly or indirectly who has given more of self-sacrificing service, who has been at it in season and out of season, night and day, Miss Keller has been, and I therefore nominate her for Secretary.

Dr. Baldwin: I move the adoption of the report of this Committee.

Seconded. Unanimously carried.

Dr. Hornsby: May I say one word more, Mr. President. Dr. Winford Smith is not here. Dr. Winford Smith was Chairman of the hospital section of the American Medical Association for this year. He had made every arrangement, every detail of the arrangements had been made for his coming to the meeting as Chairman of that Section, of which I am Secretary, and at the very last moment it was found that he could not come and therefore he is not here. Miss Jordan is not here. Miss Jordan came to my office a week before we started out here and propounded this problem to me, one that you all know. Her Board had declined to pay her expenses out here and her salary is not large—she has a small hospital—and she did not feel she could afford to come and asked my advice. I told her not to come if that was the case. She is not here, not because she did not have the interest, but because she could not.

Acting-President: Is there any further business to be brought to the attention of the organization?

Dr. Hornsby: I do not want to inject myself all the time, but I seem to think of a lot of things to say. This time I want to express, have the Association express, if possible, a sense of its appreciation of Dr. Summersgill's activities. Under great difficulties, at a time when the whole community was stirred up over its exposition, when the Hospital Association could not possibly mean much, with two very much larger organizations going at the same time, meeting in convention, with every difficulty conceivable, at a time and place of this sort, it seems to me he has done remarkably well for us. An immense amount of credit is due to Dr. Summersgill, and I am going to take the liberty, if I may, of asking for a rising vote of appreciation of Dr. Summersgill's services to the Association. Those in favor will kindly rise.

Acting-President: I thank you very much for this kind expression, but I cannot permit it to go without an answer, and that is that I have had invaluable assistance from the Executive Committee and also from Dr. Nealley, who gladly assumed the place of Acting-Secretary. I do not know what I would have done without Dr. Nealley. I did not know the Secretary was not coming until three or four days before the Convention, and Dr. Nealley has been of great help to me. Is Dr. O'Neill present?

Dr. Warner: I telephoned to Dr. O'Neill this morning and he stated that he would be here in about an hour.

Dr. Wallenburg: May I announce at this time that the automobiles for the ride will be at the steps of the Inside Inn at eleven o'clock? I trust you will all take that ride. I want to urge you to do so.

Acting-President: In the absence of Dr. O'Neill, I would like to ask the advice of some of the older members as to whether it would be possible and feasible to appoint a Committee to act for the organization in the adoption of the Auditors' report.

Dr. Hornsby: I move that the President acting and Secretary acting now be constituted a Committee for the acceptance of that report.

Seconded. Approved.

Acting-President: The meeting stands adjourned until next year.

NON-COMMERCIAL EXHIBIT, AMERICAN HOSPITAL ASSOCIATION, 1915.

1. Christ Hospital, Cincinnati, Ohio.
    - 1 screen door.
    - 1 uniform doll.
2. Asbury Hospital, Minneapolis.
    - 1 infant's shirt.
    - 1 uniform doll.
3. Cook County Tuberculosis Sanatorium, Oak Forest, Ill.
    - 1 hemorrhage basket.
4. Buffalo Homeopathic Hospital, Buffalo, N.Y.
    - 1 baby bassinette.
    - 1 complete set infant's clothing.
    - 1 mother and infant's chart.
    - 1 complete set hospital records and general charts.
    - 1 set photographs.
    - 1 model nurse.
    - 1 set ward solution bottles as marked by the nurses.
5. Swedish Hospital, Minneapolis, Minn.
    - 1 combination dresser and locker (steel).
    - 1 bedside stand (steel).
    - 1 canvas utensil holder (for bed pans, urinals, etc.).
    - 1 set of eleven mounted photographs showing interior of building.
    - 1 uniform doll.
    - 3 framed photographs.
6. Memorial Hospital, New London, Conn.
    - 2 sets of photographs of contagious ward.
    - 1 chart on observation in shock and hemorrhage.
7. May Thompson Hospital, Chicago, Ill., by courtesy of Dr. Bertha Van Hossen.
    - 1 obstetric bed.
    - 1 obstetric sheet.
    - 2 obstetric envelopes.
    - 1 set sleeves and jacket.
    - 1 set of screens to surround the bed.
    - 1 portable operating table with stirrups.
    - 1 set of books.
8. Washington County Hospital, Washington, Iowa.
    - 1 continuous sponge.
    - 2 charts illustrated by photographs.
    - 1 method of marking keys.
    - 1 dressing tray.
    - 1 safety pin problem.

9. St. Luke's Hospital, St. Paul, Minn.
    - 1 eye tray and dressing carriage.
    - 1 uniform doll.
    - 1 temperature chart.
    - 1 scrap book.

10. The Detroit Home Nursing Association, Detroit, Mich.
    - 1 educational exhibit on home care illustrated by photographs and charts.

11. St. Mary's Hospital and Sanatorium, Tucson, Arizona.
    - 1 sputum specimen container.

12. Kankakee Hospital, Kankakee, Ill.
    - 1 pathological laboratory report by Dr. H. T. Childs.

13. Grace Hospital, Detroit, Mich.
    - 1 surgical bed.
    - 1 uniform doll.
    - 1 bed rack for raising foot of bed.
    - 1 bed rest.
    - 1 canvas stretcher and sticks.
    - 1 hypodermic tray.
    - 1 book of Grace Hospital charts, blanks, etc.
    - 1 class work exhibit.

14. St. Luke's Hospital, Duluth, Minn.
    - 1 uniform doll.

15. The Christian H. Buhl Hospital, Sharon, Pa.
    - 1 instruction board.
    - 1 dresser scarf.
    - 1 baby's gown.
    - 1 infant's dress.
    - 1 ether gown.
    - 1 set ether sleeves.
    - 1 pupil nurses' record.
    - 1 set history sheets.

16. Wisconsin Anti-Tuberculosis Ass'n., Milwaukee, Wis.
    - 1 exhibit illustrated by photograph of display in department store window.

17. Minnesota State Sanatorium, Cass County, Minn.
    - 20 photographs.

18. Youngstown Hospital, Youngstown, Ohio.
    - 1 book, charts, records, etc.

19. Northwestern Hospital, Minneapolis, Minn.
    - 1 book of Northwestern Hospital records, charts, etc.

20. University Hospital, Minneapolis, Minn.
    - 1 enteroclysis devise to keep solution even temperature.
    - 1 chart.

21. Bethesda Hospital, St. Paul, Minn.
    - 1 stomach pump with return flow.
    - 1 uniform doll.

22. Hospital for Sick Children, Toronto, Canada.
    1 straight jacket.
    1 adjustable head bandage.
    1 tie down.
    1 tooth brush holder.
    1 set wristlets.
    1 ice cap holder.
    1 ezyema mask.
    1 uniform doll.
    1 set of mitts to prevent patients scratching.
    1 box splint.
    1 restraint jacket.

23. Mounds Park Sanatorium, St. Paul, Minn.
    1 set clinical records.
    1 uniform doll.

24. Illinois Training School, Chicago, Ill.
    1 hypodermic tray.

25. West Side General Hospital, St. Paul, Minn.
    1 book of charts, records, etc.
    1 uniform doll.

26. St. Barnabas Hospital, Minneapolis, Minn.
    1 uniform doll.

27. W. A. Bowman, Mount Vernon, N.Y.
    1 Short Ten Day Term Campaign illustrated by photographs and charts.

28. Lane Hospital, Stanford University, San Francisco, Cal.
    1 lifter for ether patient.

29. Flushing Hospital, Flushing, L.I., New York.
    1 never-slip cushion.

30. Joseph Lawrence Free Public Hospital, New London, Conn.
    2 photographs of white ambulance.

31. Midway General Hospital, St. Paul, Minn.
    1 uniform doll.

32. Firland State Tuberculosis Sanatorium, Seattle, Wash.
    8 photographs illustrating right and wrong methods in the care of tuberculosis patients.

33. Immanuel Hospital, Mankato, Minn.
    1 uniform doll.

34. Oregon State Tuberculosis Hospital, Salem, Ore.
    1 picture of complete plant.
    1 blue print of open air pavilion.
    1 blue print of open-air pavilion with notes for reversions of present pavilion.

35. St. John's Hospital, Fargo, N.D.
    1 uniform doll.

36. PRESBYTERIAN HOSPITAL, New York, N.Y.
    1 bed prepared for slush bath.
    1 bed arranged for out-door treatment.

37. ST. JAMES HOSPITAL, St. James, Minn.
    1 uniform doll.

38. LETTERMEN HOSPITAL, San Francisco, Cal.
    1 book of charts, records, etc.

39. NORTHERN MINNESOTA HOSPITAL, International Falls, Minn.
    1 uniform doll.

40. SAN BERNADINO COUNTY HOSPITAL, San Bernadino, Cal.
    1 book of hospital records, charts, etc.

41. MOUNT ZION HOSPITAL, San Frincisco, Cal.
    1 book of hospital records, charts, etc.
    1 temperature chart.

42. NEW ENGLAND BAPTIST HOSPITAL, Boston, Mass.

43. LOS ANGELES COUNTY TUBERCULAR HOSPITAL.
    2 blue prints of architect's plans for new building.

44. ST. MARY'S HOSPITAL, Grand Rapids, Mich.
    1 book of hospital records, charts, etc.
    1 solution chart.
    1 chart of hospital rules.

45. GERMAN GENERAL BENEVOLENT HOSPITAL, San Francisco, Cal.
    4 electrical apparatus for the treatment of patients.
    1 book of hospital records, etc.

46. EMERGENCY RELIEF HOSPITAL, San Francisco, Cal.
    1 emergency bed.

47. UNIVERSITY HOSPITAL, San Francisco, Cal.
    1 framed photograph of University Hospital Building.

48. MEMORIAL HOSPITAL, Worcester, Mass.
    1 uniform doll.
    1 book of hospital records, charts, etc.

49. THE PRUDENTIAL INSURANCE CO., Newark, N.J.
    18 charts illustrating phases of the tuberculosis mortality problem and results of sanatorium treatment.

50. CITY AND COUNTY HOSPITAL, St. Paul, Minn.
    1 uniform doll.

51. EDWARD F. STEVENS, Boston, Mass.
    1 sample cloth locker.
    1 eye and face protector for the treatment of contagious patients.

FIRST ANNUAL CONFERENCE

The Association of American Hospital Superintendents.
Organized at Cleveland, O., Sept. 12 and 13, 1899.

The meeting was called to order by Jas. S. Knowles, Superintendent, Lakeside Hospital, Cleveland, O.

Chairman
Jas. S. Knowles,
Lakeside Hospital, Cleveland, O.

Vice-Chairman
Harry W. Clark,
Supt., University Hospital, Ann Arbor, Mich.

Secretary
C. S. Howell,
Supt., Western Philadelphia Hospital, Pittsburg, Pa.

Treasurer
A. W. Shaw,
Supt., Harper Hospital, Detroit, Mich.

SECOND ANNUAL CONFERENCE.

Pittsburg, Pa.

Hotel Schenley,
August 21, 22 and 23, 1900.

Chairman
Jas. S. Knowles,
Lakeside Hospital, Cleveland, O.

Vice-Chairman
Harry W. Clark,
Ann Arbor, Mich.

Secretary
C. S. Howell,
Supt., Western Philadelphia Hospital, Pittsburg, Pa.

Treasurer
A. W. Shaw,
Supt., Harper Hospital, Detroit, Mich.

THIRD ANNUAL CONFERENCE.

Association of Hospital Superintendents.
New York City.

Murray Hill Hotel.
Sept. 10, 11 and 12, 1901.

Chairman
Chas. S. Howell,
Pittsburg, Pa.

Vice-Chairman
F. E. Baker, M.D.,
Newark, N. J.

Secretary
Jas. S. Knowles,
Cleveland, O.

Treasurer
A. W. Shaw,
Detroit, Mich.

FOURTH ANNUAL CONFERENCE.

Philadelphia, Pa.

Hotel Walton.
Oct. 14, 15 and 16, 1902.

Chairman
Dr. J. T. Duryea,
Supt., Kings Co. Hospital, Brooklyn, N.Y.

Vice-Chairman
Dr. Chas. O'Reilly,
Supt., Toronto General Hospital, Toronto, Ont.

Secretary
D. D. Test,
University Hospital, Philadelphia, Pa.

Treasurer
A. W. Shaw,
Supt., Harper Hospital, Detroit, Mich.

FIFTH ANNUAL CONFERENCE.

ASSOCIATION OF HOSPITAL SUPERINTENDENTS.
CINCINNATI, O.

City Hall,
Oct. 20, 21 and 22, 1903.

President
JOHN FEHRENBATCH,
Cincinnati, Ohio.

Vice-President
CHAS. O'REILLY, M.D.,
Toronto, Ont.

Secretary
DANIEL D. TEST,
Philadelphia, Pa.

Treasurer
A. W. SHAW,
Supt., Harper Hospital, Detroit, Mich.

SIXTH ANNUAL CONFERENCE.

ATLANTIC CITY, N.J.

Hotel Rudolf.
Sept. 21, 22 and 23, 1904.

President
DANIEL D. TEST,
Pennsylvania Hospital, Philadelphia, Pa.

Vice-Presidents
DR. CHAS. O'REILLY, Toronto General Hospital, Toronto, Ont.
DR. JOHN M. PETERS, Rhode Island Hospital, Providence, R.I.
GEO. W. SAWYER, Baptist Hospital, Chicago, Ill.

Secretary
MRS. A. M. LAWSON,
General Memorial Hospital, New York City.

Treasurer
DR. A. B. ANCKER, City and County Hospital, St. Paul, Minn.

SEVENTH ANNUAL CONFERENCE.

Association of Hospital Superintendents.
Boston, Mass.

Hotel Vendome.
Sept. 26, 27, 28 and 29, 1905.

President
Geo. H. M. Rowe, M.D.
City Hospital, Boston, Mass.

Vice-Presidents
Dr. Chas. O'Reilly, Toronto General Hospital, Toronto, Ont.
Dr. Geo. E. Ricker, City Hospital, Minneapolis, Minn.
Jas. R. Coddington, New Haven Hospital, New Haven, Conn.

Secretary
Mrs. A. M. Lawson,
General Memorial Hospital, New York City.

Treasurer
Reuben O'Brien,
General Hospital, Patterson, N.J.

EIGHTH ANNUAL CONFERENCE.

Buffalo, N.Y.

Hotel Niagara.
Sept. 18, 19, 20 and 21, 1906.

President
Geo. P. Ludlam,
New York Hospital, New York City.

Vice-Presidents
Dr. Renwick R. Ross, Buffalo General Hospital, Buffalo, N.Y.
Rev. Geo. C. Hunting, St. Mark's Hospital, Salt Lake City, Utah
Miss Mary L. Keith, Rochester City Hospital, Rochester, N. Y

Secretary
George Bailey, Jr.
Jefferson Medical College Hospital, Philadelphia, Pa.

Treasurer
Reuben O'Brien,
General Hospital, Patterson, N.J.

NINTH ANNUAL CONFERENCE.

AMERICAN HOSPITAL ASSOCIATION.
CHICAGO, ILL.

Palmer House.
Sept. 17, 18, 19 and 20, 1907.

President
DR. RENWICK R. ROSS,
Buffalo General Hospital, Buffalo, N.Y.

Vice-Presidents
LOUIS B. CURTIS, St. Luke's Hospital, Chicago, Ill.
W. W. KENNEY, Victoria General Hospital, Halifax, N.S.
DR. ALICE M. SEABROOKE, Women's Hospital, Philadelphia, Pa.

Secretary
GEO. BAILEY, JR.
Jefferson Medical College Hospital, Philadelphia, Pa.

Treasurer
ASA BACON,
Presbyterian Hospital, Chicago, Ill.

TENTH ANNUAL CONFERENCE.

TORONTO, ONT.

King Edward Hotel.
Sept. 29, 30, Oct. 1 and 2, 1908.

President
S. S. GOLDWATER, M.D.,
Mt. Sinai Hospital, New York City.

Vice-Presidents
J. ROSS ROBERTSON, Hospital for Sick Children, Toronto, Ont.
JOHN M. PETERS, M.D., Rhode Island Hospital, Providence, R.I.
RACHEL A. METCALFE, Central Maine General Hosp., Lewiston, Me.

Secretary
W. L. BABCOCK, M.D.,
The Grace Hospital, Detroit, Mich.

Treasurer
ASA BACON,
Presbyterian Hospital, Chicago, Ill.

ELEVENTH ANNUAL CONFERENCE.

AMERICAN HOSPITAL ASSOCIATION.
WASHINGTON, D.C.
New Willard Hotel.

President
DR. JOHN M. PETERS,
Rhode Island Hospital, Providence, R.I.

First Vice-President
DR. ARTHUR B. ANCKER,
City and County Hospital, St. Paul, Minn.

Second Vice-President
DR. J. N. E. BROWN,
522 Church St., Toronto, Ont.

Third Vice-President
MISS EMMA A. ANDERSON,
New England Baptist Hospital, Boston, Mass.

Secretary
W. L. BABCOCK, M.D.,
The Grace Hospital, Detroit, Mich.

Treasurer
ASA BACON,
Presbyterian Hospital, Chicago, Ill.

TWELFTH ANNUAL CONFERENCE.

AMERICAN HOSPITAL ASSOCIATION.
ST. LOUIS, MO.
Sept. 20, 21, 22 and 23, 1910.

President
H. B. HOWARD, M.D.,
Peter Bent Brigham Hospital, Boston, Mass.

Vice-Presidents
J. N. E. BROWN, M.B.,
Superintendent, General Hospital, Toronto, Ont.

MISS MARY L. KEITH,
Rochester City Hospital, Rochester, N.Y.

WAYNE SMITH, M.D.,
Washington University Hospital, St. Louis, Mo.

Secretary
W. L. Babcock, M.D.,
The Grace Hospital, Detroit, Mich.

Treasurer
Asa Bacon, Esq.,
Presbyterian Hospital, Chicago, Ill.

THIRTEENTH ANNUAL CONFERENCE.

AMERICAN HOSPITAL ASSOCIATION.

New York City.
Sept. 19, 20, 21 and 22, 1911.

President
W. L. Babcock, M.D.,
The Grace Hospital, Detroit, Mich.

Vice-Presidents
F. A. Washburn, M.D.,
Massachusetts General Hospital, Boston, Mass.

Miss Mary L. Keith,
Rochester General Hospital, Rochester, N.Y.

Frederick Brush, M.D.,
Post-Graduate Hospital, New York City.

Secretary
J. N. E. Brown, M.B.,
522 Church St., Toronto, Ont.

Treasurer
Asa Bacon, Esq.,
Presbyterian Hospital, Chicago, Ill.

FOURTEENTH ANNUAL CONFERENCE.

AMERICAN HOSPITAL ASSOCIATION.

Detroit, Mich.
Sept. 24, 25, 26 and 27, 1912.

President
Henry M. Hurd, M.D.,
Sec'y, Board of Trustees, Johns Hopkins Hosp., Baltimore, Md.

Vice-Presidents

A. J. Ranney, M.D.,
Superintendent, Lakeside Hospital, Cleveland, O.

J. L. Hudson, Esq.,
President, Board of Trustees, Harper Hospital, Detroit, Mich.

Miss Nancy P. Ellicott,
Superintendent, Rockefeller Institute, New York City.

Secretary
J. N. E. Brown, M.B.,
Superintendent, Detroit General Hospital, Detroit, Mich.

Treasurer
Asa Bacon, Esq.,
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